Draft Report
EPI/Preliminary Assessment
Drew Industrial Division Inc.
(Ashland Chemical Company)
(Olin Water Services)
Kansas City, Kansas
TDD #F-07-9003-005/PAN #FKS0285RA
Site #T98 Project #001
Prepared by: E & E/FIT for Region VII EPA
FIT Project Manager: Patty S. Roberts
Submitted to: Pete Culver, RPO
RCRA-EPI Contact: Mark Matthews
Date: April 26, 1991

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SECTION 1: INTRODUCTION

As part of the United States Environmental Protection Agency's (EPA) Environmental Priorities Initiative (EPI) Program, Region VII EPA has requested Ecology and Environment, Inc., Field Investigation Team (E & E/FIT) to conduct an EPI Preliminary Assessment (PA) of the Olin Water Services-Olin Corporation located at 305 Sunshine Road, Kansas City, Kansas. Recently, the Olin Water Services Branch was purchased by Ashland Oil, Inc. The facility is now named Drew Industrial Division (Ashland Chemical Company), a subsidiary company of Ashland Oil, Inc. However, for purposes of this EPI-PA, the site will be referred to as the Olin Water Services.

The EPI Program integrates the Resource Conservation and Recovery Act of 1976 (RCRA), the Hazardous and Solid Waste Amendments (HSWA) of 1984, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the Superfund Amendments and Reauthorization Act of 1986 (SARA) in order to set priorities for the cleanup of the most environmentally significant sites first. This EPI-PA is essentially equivalent to RCRA's Preliminary Review/Visual Site Inspection (VSI) and identifies potential or actual releases at the facility and determines if remedial measures are necessary.

This report discusses information obtained from the EPA-RCRA, Olin Water Services, and Kansas Department of Health and Environment (KDHE). All solid waste management units (SWMUs) are described in detail. Observations obtained from the on-site reconnaissance conducted by E & E/FIT on April 27, 1990, are included along with site-specific information concerning the physical and environmental setting. Photographic documentation is contained within Appendix A. EPA's PA Form 2070-12 is included as Appendix B.

SECTION 2: SITE LOCATION AND DESCRIPTION

2.1 SITE LOCATION

The Olin Water Services-Olin Corporation is located in the southwest 1/4 of Section 27, Township 10 South, Range 25 East. The geographic coordinates are 39° 08'47" N latitude and 94° 36'58" W longitude. The site is situated at the intersection of Sunshine and Fiberglas roads, in the Fairfax Industrial District, north of downtown Kansas City, Kansas, in Wyandotte County (Figure 2-1).

2.2 SITE DESCRIPTION AND WASTE HANDLING

The Olin facility manufactures chemicals for industrial water treatment facilities. The company's manufacturing process consists of blending approximately 150 different inorganic and organic raw materials (liquid and powder) to produce approximately 250 different water treatment compounds (E & E 1990). The raw materials include solvents, acids, and caustics (Appendix C). The water treatment chemicals produced at the site have various applications ranging from corrosion control in boiling water and cooling water treatments to inorganic coagulants (polymers) in municipal and industrial wastewater clarification treatment processes.

The facility formulates water treatment products on a batch basis; the formulating schedule and amount of each particular product produced depends both on demand and warehouse inventory. The plant facility is utilized on a daily basis. After formulation, Olin performs analytical tests of the batches at its on-site laboratory to assure that product meets specifications; then the product is drummed for shipment or storage. Olin receives and ships both bulk and drummed materials. The amount of shipments can vary daily. It was reported that about 7.5 million pounds of raw materials as well as finished products were shipped and received by the Olin facility in 1989 (E & E 1990). The Olin facility does not receive or ship by rail; however, the railroad off-loading area north of Olin is operational and is used by Owen-Corning Fiberglas Company (E & E 1990).

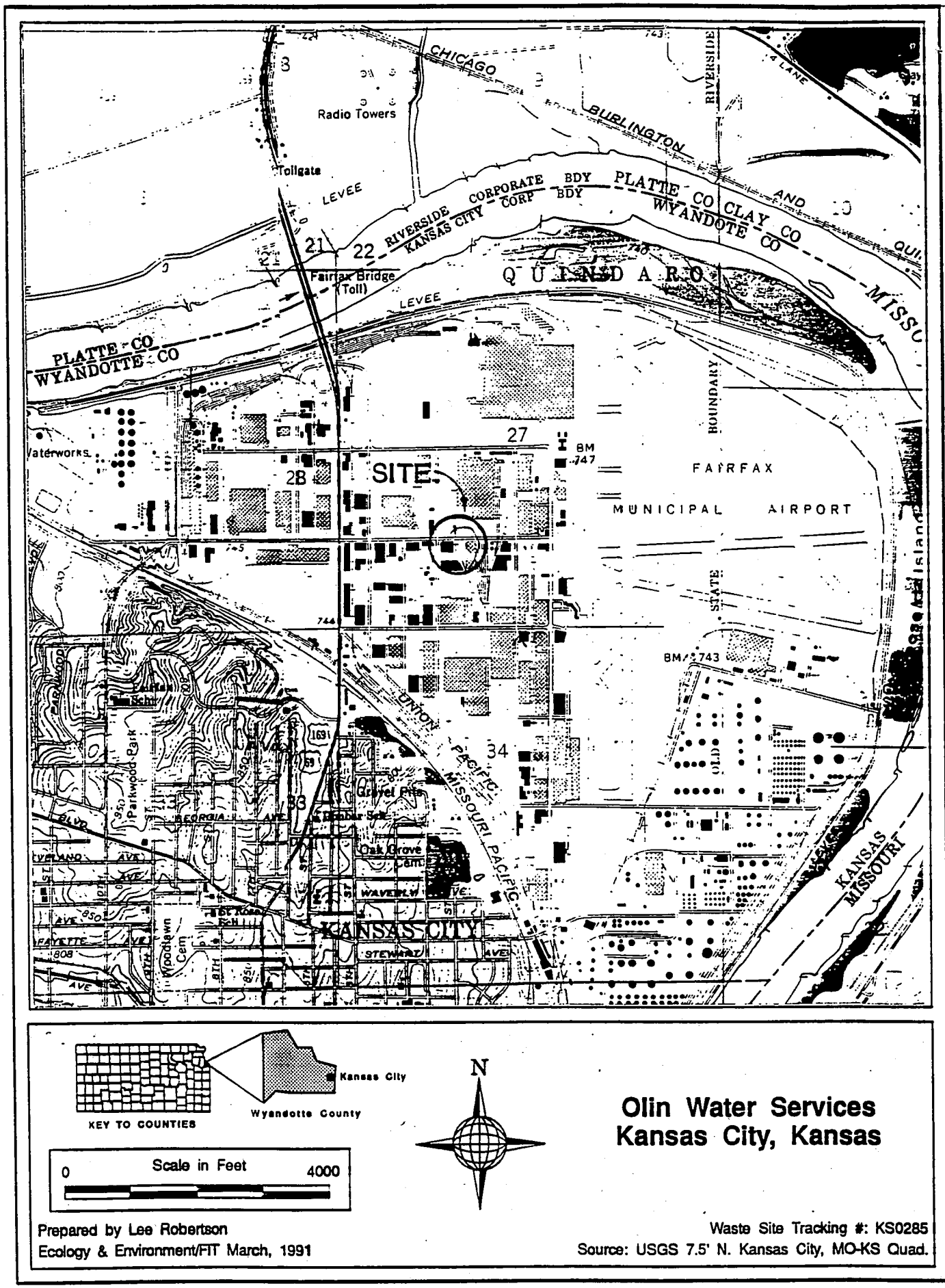

Figure 2-1: SITE LOCATION

Olin Water Services occupies two buildings that are separated by railroad tracks (Figure 2-2). One building serves as a shipping and receiving warehouse for raw materials (unformulated new chemicals) and for finished products. The warehouse also contains some administrative offices. The second building is the plant facility and houses all the chemical manufacturing processes (Appendix A; Photo 1). On a daily basis, raw material and finished products are shuttled by truck to and from the blending areas. An area in the plant facility referred to as the Piece Drum Area also temporarily stores finished product (E & E 1990). These drums remain partially full until the next batch of similar products is made to fill them completely. Full drums of finished product are moved to the warehouse for shipment.

Directly south of the plant building is the production yard, where the company's RCRA-permitted hazardous waste container storage area is located, as well as hundreds of empty 55-gallon plastic drums (Photos 2 through 7). These drums are clean and are stored on four-foot wide pallets, stacked two or three drums high. Two dumpsters are located in the production yard and contain solid wastes such as scrap building materials and empty unusable drums, which have been triple rinsed and crushed. Two 10,000-gallon product storage tanks are also located east of the plant; the south tank is empty, and the north tank contains sodium hydroxide (Figure 2-2).

The hazardous waste container storage area and production yard is surrounded by a seven-foot high chain-link fence, topped by three strands of barbed wire. There are two gates located on the east and west allowing access for loading and unloading of materials. Generally, only the west gate is open during working hours (7:00 a.m. to 4:30 p.m.). At the end of each working day, the production plant is locked and all access gates are chained and padlocked. For identification of all pertinent site features see Figure 2-2 and Appendix A.

The raw materials that Olin uses and finished products that Olin produces at its facility display hazardous characteristics. Wastes generated during the manufacturing process are from liquid or dry chemical spillage from the formulating drum loading operations and non-reusable rinse water from the formulating process. The majority of non-reuseable rinse water is either recycled as make-up water for

succeeding batches or is discharged to the sewer system after neutralization. If determined by analysis to be hazardous, it is drummed and placed in the container storage area (Bosky 1987). Raw material and finished products that are unusable or off-specification are also accumulated, containerized, and stored in the hazardous waste container storage area. The majority of identified waste stored in the permitted container storage area exhibit characteristics of reactivity, corrosivity, ignitability, and/or EP toxicity as denoted in 40 Code of Federal Regulations (CFR) Subpart C (E & E 1990). F001 (methylene chloride) is also generated at the Olin's on-site laboratory; however, the waste quantity is minimal. Presently, no F001 wastes are stored in the container storage area. Various U-listed wastes (orthodichlorobenzene, pentachlorophenate) and non-hazardous wastes are also stored in Olin's hazardous waste container storage area. The last entry date in Olin's hazardous waste inventory list for placement of containerized wastes in the storage facility was November 4, 1989 (Appendix D). It was reported that the facility is minimizing wastes by re-using and reworking materials that would otherwise require disposal as a hazardous material (E & E 1990). On occasion, customers return off-specification products to the Olin facility to be reworked.

2.3 SITE CONTACTS

Persons familiar with operations or have regulatory involvement with the facility include:

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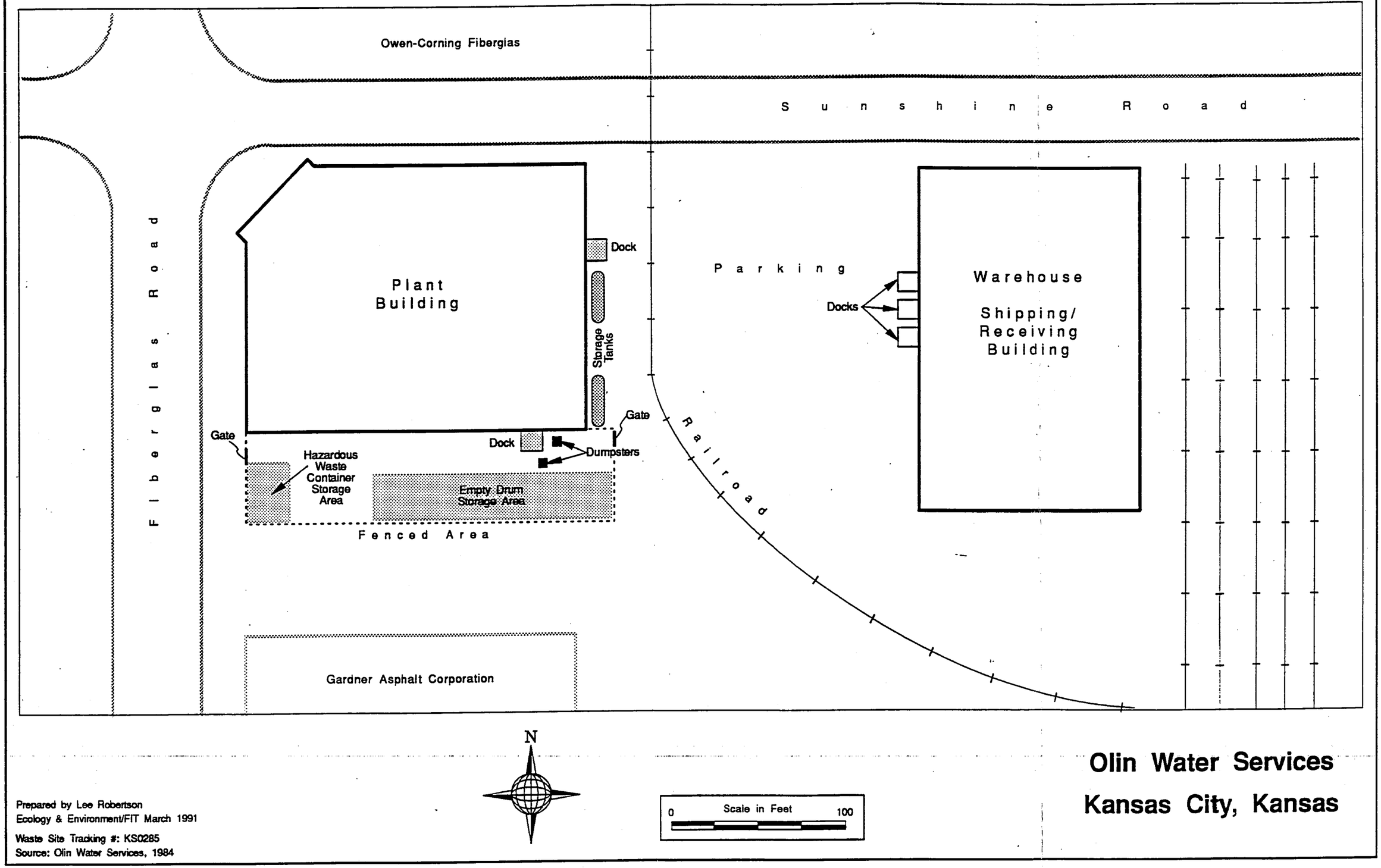

Prepared by Lee Robertson
Ecology & Environment/FIT March 1991

Waste Site Tracking #: KS0285
Source: Olin Water Services, 1984

Olin Water Services
Kansas City, Kansas

Figure 2-2: SITE FACILITY

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SECTION 3: SITE BACKGROUND AND HISTORY

3.1 GENERAL HISTORY

The property at 305 Sunshine Road was used in the 1950s and early 1960s as an electro-circuit assembly plant. In the mid to late 1960s, the property was owned by Deday Chemical Company, which began manufacturing (blending) water treatment chemicals in about 1965. The facility was purchased by the Olin Corporation in 1970, and the Olin Water Services Division commenced operation in 1970. The facility in Kansas City, Kansas, employs about 30 employees including laboratory and manufacturing workers, and distributes water treatment products nationwide.

In December 1989, Olin Water Services-Olin Corporation was sold to Drew Industrial Division (Ashland Chemical Company) (E & E 1990). The facility soon will be re-named and will function as a Midwest Industrial Division regional supplier only (E & E 1990). Drew Industrial Division plans to remove the two product storage tanks located east of the production plant and replace them with a tank farm, consisting of 16 5,600-gallon to 9,600-gallon storage tanks (E & E 1990). Olin/Drew representatives are also considering expanding the north side of the warehouse. Furthermore, as part of the Drew/Olin purchase agreement, use of combustible/flammable materials and chromium products was to be discontinued at the Kansas City facility (Dame 1990). These products were for the most part discontined about July 1990. Olin supplies about 2 55-gallon drums every three to four months to one customer for use as fuel oil treatment. Finally, under terms of the merger, all hazardous wastes stored in the RCRA-permitted hazardous waste container storage area are to be disposed of by Olin Water Services (Dame 1990).

During the period of 1980 to 1984, the Olin facility operated as an interim status hazardous waste management facility under a RCRA Part A Notification. Activities specified in the notification included storage of hazardous wastes in drum containers. Olin submitted an initial Part B Hazardous Waste Permit Application to EPA and KDHE on March 4, 1983. After numerous revisions and compliance activities, EPA made a tentative decision to issue a RCRA Part B Permit to the Olin Water Services on

September 21, 1984 and issued a public comment period, expiring on November 13, 1984. After an agreement on the contents of the Part B Permit Application, KDHE and EPA granted the Olin facility a final permit which became effective on April 6, 1985. The construction of a drum storage structure consisting of three-sided cinder block walls and covered roof was specified in the permit and completed on August 8, 1985. In 1987, Olin revised the original Part B Permit to include storage of drums by a linear height limitation, with total capacity not to exceed 200 55-gallon drums. This modification was subsequently incorporated into the Olin Part B Permit and approved on February 15, 1988.

In addition to being a hazardous waste storage facility, Olin has been classified as a generator of hazardous wastes from the preparation of liquid and powder water treatment formulations. The Olin Water Services is a State-lead site and under KDHE authority; the Olin facility is classified as a Kansas generator (generates between 25 and 1,000 kilograms of hazardous wastes per month) (Cahoon 1990). Because state regulations are more stringent, the Kansas generator status supersedes EPA's classification of a small quantity generator (1,000 kilograms of hazardous wastes per month).

The ownership, including the RCRA Part B Permit was scheduled to be transferred from Olin Water Services to Drew Industrial Division on December 29, 1989 (Woods 1989). For a more detailed permit and regulatory action summary see Section 3.2.

3.2 PERMIT AND REGULATORY ACTIONS SUMMARY

Following is a chronological history of the compliance history of the Olin Water Services facility.

CHRONOLOGICAL LISTING OF OLIN COMPLIANCE HISTORY

February 27, 1979	Olin Water Services submitted a Hazardous Waste Generator Report to KDHE stating that the facility utilizes reactive, corrosive, ignitable and toxic materials.
May 1, 1979	Olin submitted to KDHE an application for a hazardous waste storage permit.

April 17, 1980	KDHE conducted a hazardous waste generator's survey of the Olin's Water Services facility and found that the facility stores off-specification products on site for longer than 90 days. Periodically, these products are transported from the site for disposal.
November 18, 1980	EPA/RCRA received Olin Water Services Part A Hazardous Waste Permit Application, and signed statement that the operation or construction of the facility began before November 19, 1980.
December 16, 1980	EPA granted Olin an initial qualification for interim status as a hazardous waste management facility.
April 22, 1981	EPA RCRA conducted an inspection at Olin Water and cited the facility for four areas of non-compliance. These non-compliance issues included inspection requirements not being carried out, containerized ignitable or reactive wastes being stored too close to the property line of the plant, and no adequate aisle space between storage drums. In addition, Olin Water Services did not have a contingency plan.
June 8, 1981	Olin submitted to KDHE an application for a Kansas hazardous waste storage, treatment, and disposal facility permit.
September 11, 1981	KDHE issued a Letter of Warning to Olin Water Services requesting corrective action of the April 1981 non-compliance issues by November 1, 1981.
October 27, 1981	Olin responded to KDHE and provided corrective action to three of the four non-compliance items identified during the April 1981 EPA/RCRA inspection. Olin petitioned for modification of the requirement that containers holding ignitable or reactive waste must be located at least 50 feet from the property line of the plant.
July 26, 1982	KDHE and EPA renewed Olin's Interim Status Permit to June 30, 1983.
August 31, 1982	Olin submitted a variance request to KDHE/RCRA to petition for a variance to the regulation 40 CFR Section 265.176 that specifies that containers holding reactive

	or ignitable waste be stored 50 feet from the property line of the plant.
September 13, 1982	KDHE began the Part B Application process for Olin's hazardous waste storage facility. KDHE requested that this application be processed jointly by EPA and KDHE and that one permit issued to satisfy both state and federal requirements (EPA I.D. No. KSD000203638).
September 24, 1982	KDHE exempted the Olin Water Services from 40 CFR 265.176 until September 30, 1983 at which time KDHE planned to review the variance to determine if an extension was necessary.
December 21, 1982	KDHE conducted a RCRA inspection at Olin and found the facility to be in compliance with all state and federal regulations concerning generators and treatment, storage, and disposal facilities for hazardous waste.
January 6, 1983	EPA requested that Olin incorporate in the Part B Application a discussion of why the requirement of 40 CFR 265.176 could not be met and proposed alternatives to meet the intent of this regulation.
March 4, 1983	Olin submitted to EPA and KDHE 6 copies of the Part B Hazardous Waste Permit Application; copies were received on March 14.
May 5, 1983	EPA and KDHE reviewed the Olin Part B permit application, and had numerous regulatory comments, which Olin was required to respond to by June 24, 1983.
June 13, 1983	Olin requested an extension until July 18, 1983 to prepare its response to the joint EPA and KDHE comments regarding the Part B permit review on May 5, 1983.
June 21, 1983	KDHE and EPA renewed the facility's interim status until June 30, 1984.
June 23, 1983	EPA sent Olin a Letter of Warning approving the July 18, 1983, extension date and requiring the facility to mitigate the deficiencies in its Part B Permit Application by this date or face enforcement action.

July 18, 1983	Olin responded to EPA and KDHE May 5, 1983, Part B comments. Olin excluded some portions of the 40 CFR Part 264 facility standards because these standards were not directly applicable to the permit process regulations contained in 40 CFR Part 122 (now Part 270).
September 13, 1983	EPA and KDHE requested submittal of a complete Part B Permit Application.
November 23, 1983	Olin submitted a revised Part A Hazardous Waste Permit Application correcting all oversights from the original Part A.
March 7, 1984	KDHE completed the financial, technical, and management review of the Olin facility and recommends that the Part B Permit Application proceed according to schedule.
March 28, 1984	EPA issued to Olin a Complaint, Compliance Order, and Notice of Opportunity for Hearing pursuant to Section 3008 (a) (1).
March 29, 1984	EPA and KDHE reviewed Olin's July 18, 1983, response to the comment letter regarding completeness of Olin's Part B Permit. EPA and KDHE requested that the 40 CFR Part 264 information (outlining standards which define the management of hazardous waste) be received before the Part B Application was completed. Numerous other deficiencies were also addressed.
April 24, 1984	KDHE conducted a RCRA inspection at the Olin facility and found them to be in compliance except for the fact that the limited number of signs posted around the facility did not meet the regulatory safety requirements.
April 26, 1984	Olin responded to EPA/RCRA Part B Permit Application review comment letter dated March 29, 1984, and submitted numerous revisions to the Part B permit application including a revised Part A application.
May 3, 1984	Olin filed an Answer and Request for Hearing, Motion to Dismiss, Memorandum in Support of Motion to Dismiss, Motion for Prehearing Conference and Certification of Record.

May 31, 1984	EPA denied Olin's Motion to Dismiss (Docket No. 84-H-0015). EPA reviewed the Olin's April 26, 1984, response to comment on the RCRA Part B Permit Application and had numerous regulatory comments.
June 22, 1984	Olin responded to EPA Part B Permit Application review comment letter dated May 31, 1984.
July 11, 1984	EPA responded to Olin's June 22, 1984, comment letter and had a few remaining review comments.
August 7, 1984	Olin responded to EPA's July 11, 1984, review comment letter and made several revisions.
September 13, 1984	Olin submitted to EPA and KDHE 5 revised copies of the Part B Permit Application, concerning waste analysis plan, drum stacking, and buffer zone requirements.
September 14, 1984	Olin submitted to EPA and KDHE supplemental and revised information to correct and complete the Part B Permit Application.
September 20, 1984	Olin submitted to EPA and KDHE 5 copies of the corrected Part 270.14(b) (4) of the Part B Permit addressing the warning signs on the south and west sides of the hazardous waste storage facility.
September 21, 1984	EPA made a tentative decision to issue a RCRA permit to the Olin Water Services, Olin Corporation and issued a public comment period, which expired November 13, 1984.
NO DATE	EPA and KDHE issued joint Public Notice to the Olin Water Service facility for a Hazardous Waste Storage permit. If a decision was made to issue permits, the EPA permit would be issued under the authority of RCRA, while the KDHE permit would be issued under the authority of K.S.A. 65-3431 (i).
November 6, 1984	Olin waived the previous security procedures and equipment requirements in the draft Part B Permit; instead a three-sided structure with cinder block walls and a covered roof structure was constructed.

November 28, 1984	Olin submitted to KDHE the revised pages to Section 270.14(b) (4) of the Part B Permit omitting the requirement that the facility raise the height of the fence adjacent to the storage area to 16 feet.
January 4, 1985	The public comment period regarding Olin's Hazardous Waste Storage Permit ended.
January 23, 1985	EPA and the Olin Water Services developed a Consent Agreement and Consent Order for proceedings under Section 3008(a)(1).
March 6, 1985	KDHE decided that a final Part B Permit be issued to the Olin Water Service facility. The final permit would become effective on April 6, 1985, unless a review or hearing was requested.
March 15, 1985	Final Consent Agreement and Final Order agreed upon by Olin Corporation, Water Service Division and the EPA.
August 8, 1985	Olin completed construction of the hazardous waste storage containment facility. This facility is 38.5 feet from the production plant.
September 26, 1985	Olin submitted to KDHE a revised Contingency Plan.
April 29, 1986	KDHE notified Olin of the September 23, 1985, changes to the Kansas hazardous waste regulations specifying that a draft notice be placed on the property deed which details hazardous waste operations (K.A.R. 28-31-8).
July 29, 1986	KDHE conducted a RCRA inspection at the Olin facility and found several items not in compliance with state and federal regulations for generators of hazardous waste and permit requirements for storage of hazardous wastes. On the day of the inspection liquid from the VSR sump was being discharged onto the ground.
October 8, 1986	Olin advised KDHE that action has been taken to correct deficiencies noted during the July 29, 1986, RCRA inspection.
October 9, 1986	Olin submitted to KDHE revised pages of the Part B Permit Application. KDHE approved

	the modifications made on the revised pages and corrected the current Part B Permit.
October 24, 1986	KDHE conducted a follow-up RCRA inspection and found the facility to be in substantial compliance with State and Federal regulations concerning generators of hazardous waste. During the follow-up inspection, a float-activated pump was being installed on the volatile steam return (VSR) sump vat to prevent sump overflow.
April 20, 1987	KDHE and EPA conducted a joint RCRA Compliance Inspection of the Olin Water Service facility and the State Inspector determined that the facility was not meeting some of the requirements pursuant under the Kansas Hazardous Waste Management Law and/or the final permit.
May 22, 1987	Olin requested changes to their initial Part B Permit to include modifications concerning drum stacking height limitations.
June 15, 1987	Olin responded to the April 20, 1987, Compliance Inspection and corrected the deficiencies noted by KDHE.
July 2, 1987	KDHE requested that the accumulated methylene chloride waste generated by Olin's laboratory be labeled as F001 wastes and be moved to the permitted hazardous waste storage area and shipped off site within 90 days.
July 8, 1987	KDHE notified Olin of changes in RCRA regulations regarding closure, post-closure, and financial responsibility and requested modifications if appropriate.
August 7, 1987	Olin requested an extension of time for the storage of the F001 spent solvent wastes due to pending contract disposal negotiations.
August 12, 1987	KDHE approved Olin's request to extend until September 17, 1987, the 90-day period to store F001 waste.
September 25, 1987	Olin requested another extension to remove three drums of F001 wastes; difficulties were encountered in running analyses and selecting a transporter.

September 30, 1987	KDHE approved the additional extension until October 17, 1987.
October 23, 1987	KDHE reviewed Olin's Part B Permit modifications and tentatively approved the requested modifications to the hazardous waste drum storage stacking height to three high, but total storage capacity of only 200 55-gallon drums.
November 9, 1987	Olin notified KDHE that the F001 wastes had been removed from its facility to a permitted waste facility in Doe Run, Kentucky.
November 23, 1987	KDHE submitted to EPA Olin's proposed Part B Permit modifications for EPA's 15-day period of review and comment as specified in the EPA - Kansas Transition Plan.
December 17, 1987	KDHE provided Public Notice that the Olin facility may modify its hazardous waste storage permit to store drums by a linear height limitation and to conduct some inspections less frequently. The notice also announced that KDHE was solely authorized to modify the original Olin Permit.
December 18, 1987	KDHE tentatively decided to modify the RCRA permit issued to Olin Water Services and issued a 45-day public comment period.
December 28, 1987	KDHE amended Olin's generator status to include consideration of F001 generated wastes.
February 15, 1988	KDHE notified Olin that a final decision had been made to modify the Part B Permit to include the storage of drums with a linear height limitation and notice to conduct inspections less frequently.
April 20, 1988	KDHE conducted a RCRA compliance inspection and found that the Olin facility was not meeting some requirements pursuant to rules under the Kansas hazardous waste management law or specified in the final permit. Some of these non-compliance issues concerned unmarked containers, a pallet of assorted laboratory chemicals not included in the facility's storage permit, and unavailable generator's biannual report. During this inspection the use of a satellite

	accumulation area in the laboratory was discussed.
August 19, 1988	KDHE conducted a follow-up RCRA inspection and found the facility to be in substantial compliance with state and federal hazardous waste regulations.
March 1, 1989	KDHE conducted a RCRA compliance inspection and found no violations of the Kansas hazardous waste management statutes and/or regulations.
December 20, 1989	KDHE conducted a RCRA compliance inspection and found the facility not to be in compliance with state and federal regulations concerning inspection schedules and personnel training.
December 1989	Olin Water Services-Olin Corporation was sold to Drew Industrial Division (Ashland Chemical Company).
December 27, 1989	Part B Permit (KSD000203638) transferred from the Olin Corporation to Drew Industrial Division (Ashland Chemical, Company). The transaction was closed on December 29, 1989.
January 10, 1990	KDHE notified the Olin Water Services of the State's updated hazardous waste regulations. These include all regulations in 40 CFR 264, 265, 270, and 124 Subparts A, B, E, and F as in effect on July 1, 1989. K.A.R. 28-31-8 and 28-31-9 specifically adopt regulations applicable to the Olin TSD management operations.
January 22, 1990	Olin Water Services notified KDHE that the facility had corrected the two non-compliance issues identified during the December 20, 1989, compliance inspection.
March 18, 1990	Olin submitted a revised Notification of Hazardous Waste Activity form reflecting the change of ownership to Drew Industrial Division.

SECTION 4: ENVIRONMENTAL SETTING

4.1 CULTURAL AND ENVIRONMENTAL SETTING

Olin Water Services is located in the Fairfax Industrial District of Kansas City, Wyandotte County, Kansas. This industrial area is located in a densely populated area of the city. The nearest residential area is Kansas City, Kansas (population 162,070), which lies between 1/2 and 1 mile south-southwest of the site. Population concentrations within four miles of the site would encompass areas of Kansas City, and Riverside, Kansas, and Kansas City and North Kansas City, Missouri (USGS 1964; USGS 1975). The nearest residential area lies 1/2 or more miles south-southwest. A city park is located about 1/2 mile directly south of the Olin facility, and Dunbar School is located approximately 3/4 miles southwest.

4.2 TOPOGRAPHY AND DRAINAGE

The Olin Water Services facility is in the southeast corner of Wyandotte County, which lies in the Osage Cuestas physiographic unit. The main topographic features of the county are the deeply dissected loess bluffs with rock outcrops rising about 105 feet above the site to the south-southwest, and the floodplain of the Missouri River (USDA 1977). The Missouri River is located about 3,200 feet north of the site. It flows west to east at an average flow rate of 54,780 cubic feet/second (cfs) and drains the northern and eastern parts of Wyandotte County within a four-mile radius of the site (USGS 1964; USGS 1975; USGS 1980).

The site topography has a maximum slope of one percent, which is typical of alluvial flood plains. Surface water drainage from the Olin site is probably toward the north-northeast where ultimately it is collected in a storm sewer along the northern property line (E & E 1990). The actual entry point into the Missouri River is unknown.

A surface water intake at the Kansas City, Missouri, Water Works facility is located northeast of the site (upgradient) on the north bank of the Missouri River about 2.5 miles above the Missouri-Kansas

confluence. In addition, two well fields composed of seven wells are located adjacent and north of the surface water intake. The Kansas City, Kansas, surface water intake which serves 80 percent of Wyandotte County is located upriver about 2 miles from the site (Hasan 1988).

The Olin facility, as well as the entire Fairfax Industrial District, is within the Fairfax-Jersey Creek Levy Unit as designated by the U.S. Army Corps of Engineers (Hasan 1988). This area is identified as being protected from a 500-year flood (Olin 1983).

The only known potential wildlife habitat is Goose Island, located directly east on the south bank of the Missouri River. To date, it is unknown if this habitat is utilized by any state or federally designated threatened or endangered species.

4.3 SOILS

The soils at the Olin Water Services site are of the Onawa Series (USDA 1977). Onawa soils are nearly level, calcareous, and somewhat poorly drained on flat to slightly depressional floodplains. They are mainly on bottomland along the Missouri River and are subject to occasional flooding. In the area of the Olin facility, the surface layer (approximately 6 to 20 inches in thickness) are of the Onawa (overwash) soil series. These soils consist of fine sandy loam to silt loam and developed from alluvium deposits from a rare major flood. The next layer is dark-gray and very dark-gray silty clay about 19 inches thick. It is underlain by grayish-brown coarse silt loam. Onawa soils are deep and permeability is slow.

4.4 STRATIGRAPHY

The Olin Water Services site is underlain by Quaternary-age Missouri River alluvium consisting of sand, silt, and gravel deposits. The alluvial deposits range in thickness from 0 feet on the river bluffs, to more than 100 feet in the floodplain area (KGS 1963). Generally, the thickness of the alluvial deposit is directly related to the width of the floodplain. In the site vicinity the alluvial deposits are about 125 feet deep (Layne 1979). The upper 50 feet consists of finer sands and silt, which grade into coarser sands and gravel with increasing cobbles and boulders at about 100 feet (Layne 1979).

The Pennsylvanian-age bedrock outcropping in river bluffs within a four-mile radius of the site comprises the Kansas City Group and upper members of the Pleasanton Group (KGS 1963). In the site vicinity, the Kansas City Group is removed, leaving the upper members of the Pleasanton Group to directly underlie the Missouri River alluvium (KGS 1963). The Pleasanton Group consists of cyclothemic limestones and shales and occasionally sandstone. The group ranges in thickness from 20 to 150 feet. The Pleasanton Group is considered to be the basal aquitard for the limestones of the Kansas City Group (KGS 1963).

The Pennsylvanian rocks dip gently westward (KGS 1963). A generalized stratigraphic column illustrating geology in the site vicinity is included as Figure 4-1.

4.5 GROUND WATER

The aquifer of concern is located within the sands and gravels of the Missouri River alluvium. Depth to ground water in the Missouri River valley is generally between 15 and 30 feet depending on location and season. The levels fluctuate as influenced by river stage and the recharge from the surrounding uplands (Hasan 1988). The static water level near the Olin facility is about 21 feet (Layne 1979).

The Missouri alluvium is considered a high-capacity aquifer and provides wide spread industrial, agricultural (self-supplied), and municipal supplies. A large ground water sink in the Kansas City area is also found in alluvial valleys of the Kansas River. The Kansas City, Missouri, and Kansas City, Kansas, municipal water is derived almost exclusively by alluvial wells and surface water intakes along the Kansas and Missouri rivers (Hasan 1988). The nearest well field to the Olin Water Services site is located on the Missouri River, approximately 1.5 miles northeast of the Olin site (USGS 1964).

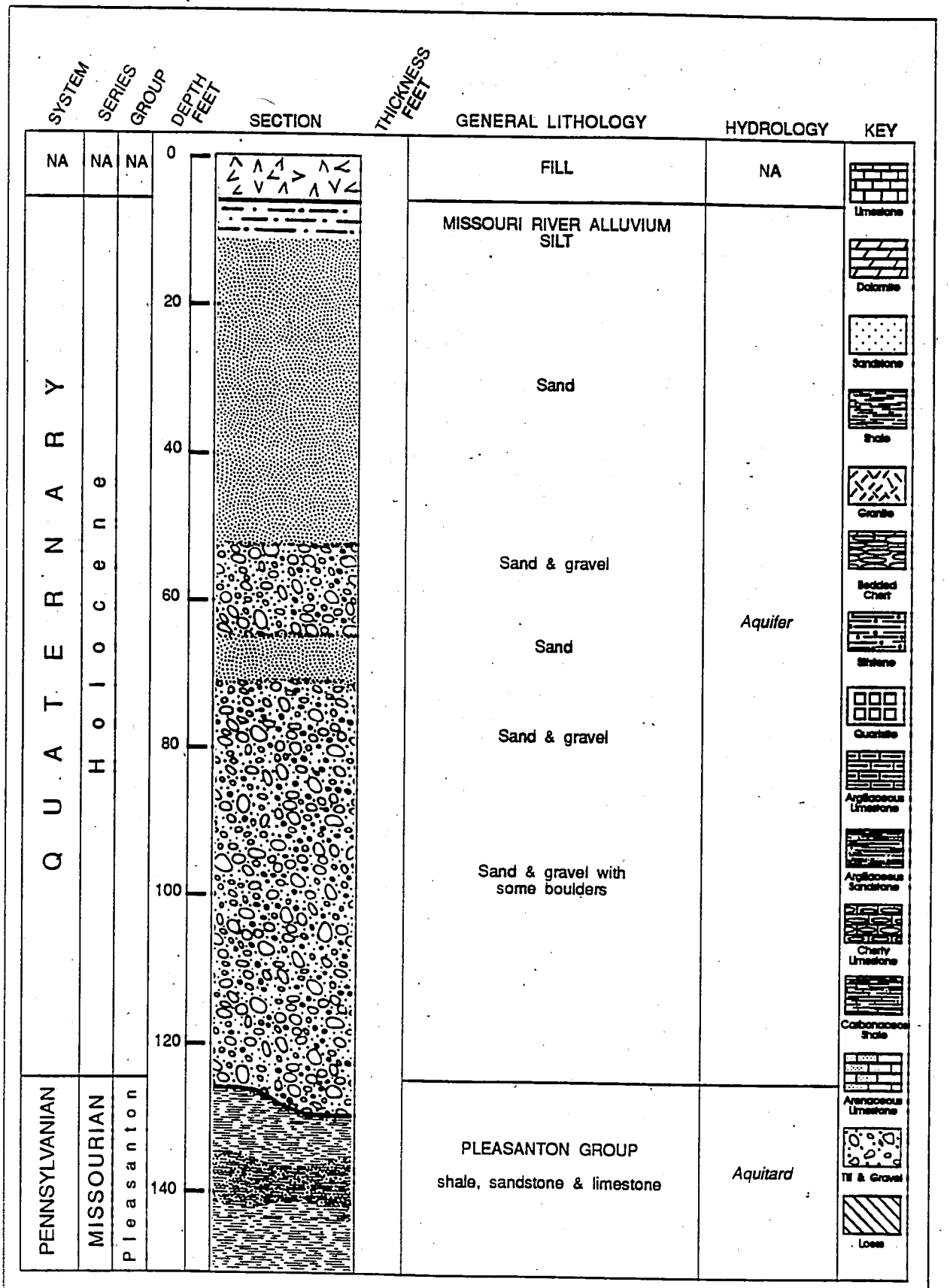


Figure 4-1: GENERALIZED STRATIGRAPHIC COLUMN

SECTION 5: DESCRIPTION OF INDIVIDUAL SOLID WASTE MANAGEMENT UNITS

5.1 HAZARDOUS WASTE CONTAINER STORAGE AREA

5.1.1 Information Summary

Unit Description

The hazardous waste container storage area (Appendix A; Photos 4 to 7) is a detached building located in the southwest corner of the production yard of the Olin Water Services facility (Figure 5-1). The overall dimension is about 31 by 26 feet, and the area available for storage is about 25 by 24 feet (Olin 1983). The floor of the building is a reinforced concrete slab surrounded on three sides by concrete block walls and covered by a steel roof with clear panels for lighting. The north side of the building is open and has a six-foot-wide ramp along the entire length. The drums are stored on 4-foot-wide pallets in 4 rows, 5 pallets deep with aisles on either side of the rows and stacked at a height not to exceed 12 feet. The total number of drums stored in the container area will not exceed 200 55-gallon drums (Olin 1987). Some of the drummed wastes have been stored in this facility for several years (E & E 1990). Warning signs are posted around the storage facility so as to be clearly legible at any position within 25 feet of the container storage area. Additional security is provided by a private security patrol which makes nightly patrols. The hazardous waste container storage area is a RCRA-regulated unit and is about 38.5 feet away from the production plant (Olin 1987).

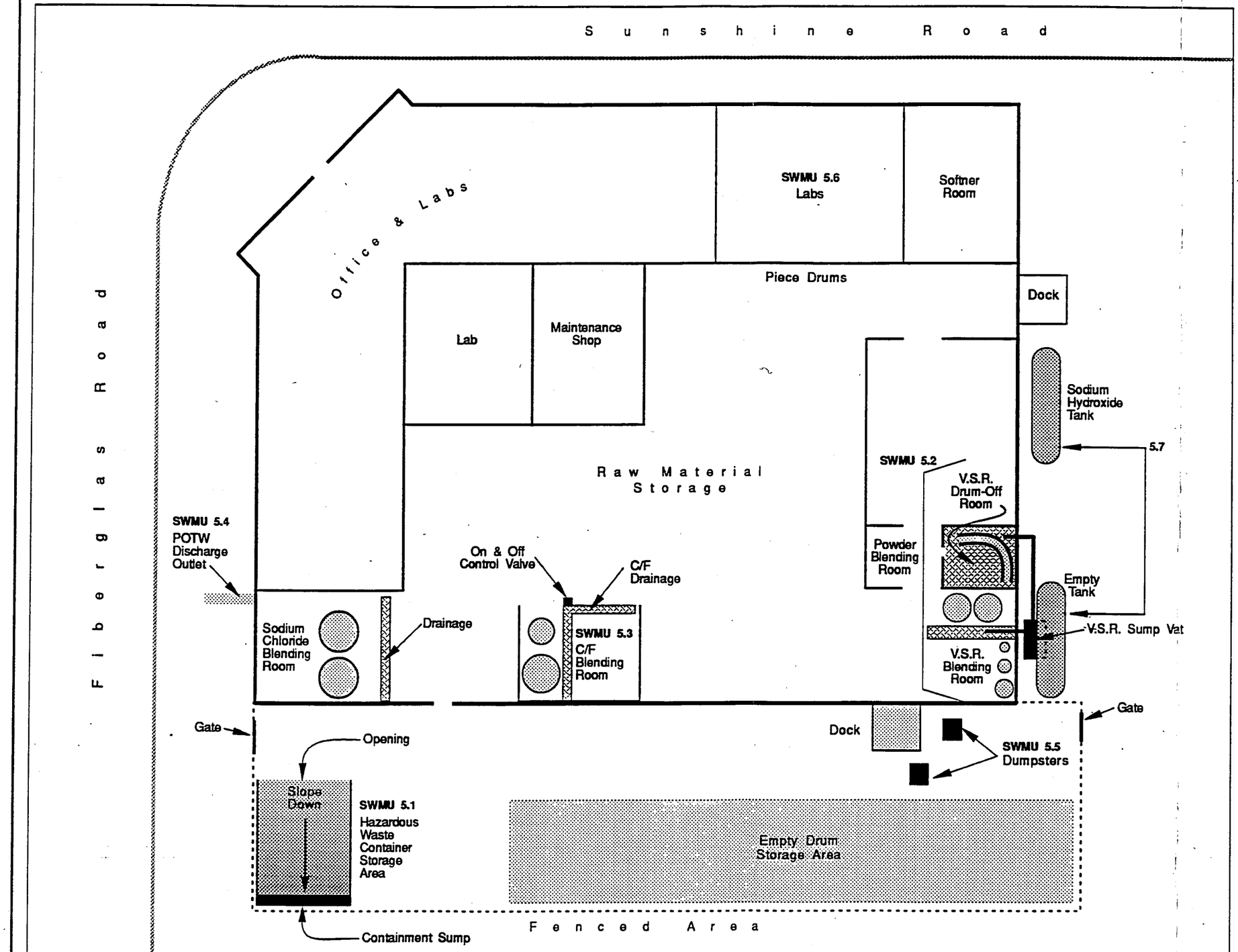
Dates of Operation

1985 to present

Wastes Managed

The hazardous waste container area is used to store liquids and solids (powder), with the majority being aqueous wastes that are off-specification raw materials and products (Dame 1990). Characteristic hazardous wastes (ignitable, corrosive, reactive, and/or toxic) are the major type of wastes stored in the facility with the exception

Olin Water Services
Kansas City, Kansas
Plant Building



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LEGEND

SWMU 5.1	Hazardous Waste Container Storage Area
SWMU 5.2	V.S.R. Sump Vat and Drainage
SWMU 5.3	C/F Blending Room Drainage
SWMU 5.4	POTW Discharge Outlet
SWMU 5.5	Dumpsters
SWMU 5.6	Satellite Accumulation Area
5.7	Area of Concern
C/F	Corrosive & Flammable
V.S.R.	Volatile Steam Return
	Collection Trench
	Above Ground Product Storage Tank
	Product Blending Tank/ Storage Tank

0 Scale in Feet 50

Prepared by Lee Robertson
Ecology & Environment/FIT March 1991

Waste Site Tracking #: KS0285
Source: Olin Water Services, 1984

Figure 5-1: SWMU LOCATIONS

of four drums of U-listed wastes and several drums of non-hazardous waste (polymers) (E & E 1990). All wastes stored in the facility are generated by Olin Water Services. On occasion, a customer may return an off-specification product to be reworked. The actual composition of the drummed characteristic wastes is unknown. In addition, the quantity of wastes varies, but the facility inventory records obtained during the April 1990 VSI showed that 138 drums are stored in the container storage area (Appendix D). The last entry noted in the facility inventory list was on November 4, 1989. The majority of waste listed consisted of D001 ignitable waste (93 drums) and D007 EP toxic wastes (33 drums). The inventory also listed eight drums of D002 corrosive materials; three drums of orthodichlorobenzene; and one drum of pentachlorophenate. Bill Dame, Olin Plant Manager, has reported that 13 drums of off-specification product (Olin #2806) have been removed since the April 1990 VSI. Therefore, 125 hazardous waste containers were being stored in this RCRA-regulated unit at this writing. This waste has been stored in this SWMU greater than 90 days.

Release Controls

The storage facility is designed to physically and structurally hold an area four pallets wide by five pallets deep. The floor is constructed of a monolithically poured concrete base and slopes to the south toward a containment sump constructed of concrete reinforced with carbon steel wire mesh (Figure 5-1). The sump cover is made of a carbon steel grate. The sump capacity is sufficient to provide for collection of 10 percent of the storage facility's free liquid capacity (Olin 1987). Run-on is prevented by the cinder block walls on the south, east, and west sides of the facility and an access ramp on the north side of the storage area. Under the terms of the Part B Permit, drums of aqueous waste material should be placed between ignitable and reactive solid materials and ignitable liquids to form a buffer zone (Olin 1987). During the VSI, it was unclear whether an adequate buffer zone was in place for this unit; however, the actual potential of a fire and/or violent reaction is inherently low due to the characteristics of the chemicals utilized at the Olin facility.

The hazardous waste container storage area is inspected by Olin personnel for adequate aisle space, container deterioration, and condition of containment floor and sump. If liquid accumulates in the storage area it is pumped with a portable sump pump into 55- or 30-gallon container(s). The wastes are sampled and analyzed as outlined in the EPA/KDHE Part B Waste Analysis Plan (Olin 1983). If the liquid is found to meet all the sanitary sewer discharge requirements as addressed in Olin Water Services Wastewater Discharge Permit (#I880) (Appendix E) it will be discharged to the sanitary sewer via one of the trench drains inside the plant. However, if the accumulated wastes are determined to exhibit hazardous wastes characteristics, it will be placed in the hazardous waste container storage area (E & E 1990).

History of Releases

Available file information provided no documentation or indication of releases from this unit. Observations made during the VSI provided no indications of any releases from this unit. Drummed wastes were neatly stacked and did not exceed the 12-foot linear height requirement addressed in Olin's Part B Permit (Olin 1987; E & E 1990). Overall, the containers were in adequate condition; however, a few drums were slightly dented, and an empty drum was blocking the aisle at the sump located in the back of the storage facility.

5.1.2 Further Information Needs

The Olin/Drew purchase agreement called for all waste in the hazardous wastes container storage area to be disposed off site. Olin planned to have this completed by November 30, 1990 (Dame 1990). Further information is needed to verify whether removal of the hazardous waste from the container storage area has been accomplished. Furthermore, proper closure proceedings will need to be addressed by the new facility owners (Drew Industrial Division).

5.2 VSR SUMP VAT AND DRAINAGE

5.2.1 Information Summary

Unit Description

The volatile steam return (VSR) formulating area includes two rooms consisting of a blending area with five tanks and related equipment and an area referred to as the Drum-off Room (Figure 5-1). It should be noted that the name given to this blending area refers to the production of volatile amines which were produced in this area 20 years ago. This application, that the name implies, no longer exists for this formulation area. One of the blending tanks in the VSR Room was a Fuel Oil Treatment (FOT) tank, with a capacity of 1,000 gallons. An Olin representative reported that this tank had been out of service about a year due to the elimination of fuel treatment products. Since the VSI, this tank has been removed from the VSR Blending Room (Prouty 1990). The VSR tank, (capacity 2,000 gallons) is still used and is made of stainless steel (Appendix A, Photo 12). Three smaller stainless steel blending tanks with capacities of 100, 300, and 750 gallons are also utilized in the VSR Room and are located along the east wall. All tanks are situated on a monolithically poured concrete base. The VSR Drum-off Room is a packaging room for finished products; chemicals from the VSR blending tanks are pumped and containerized into drums.

The waste from the two rooms is collected in a self-contained sump vat located outside between the production plant and the empty product storage tank. The above-ground steel vat is about 2 feet by 6 feet and has a maximum capacity of 100 gallons (Appendix A, Photo 14). The VSR blending room has a one foot wide by two foot deep concrete in-floor trench with a covered metal grate (Appendix A, Photo 12). This floor trench is continuous with the containerized sump vat (Appendix A; Photo 14; Figure 5-1). The maximum capacity of the trench is also 100 gallons. The collection trench in the VSR Drum-off Room comprises the entire floor with an outlet located in the northeast corner with PVC piping extending outside to the containerized steel sump vat (Appendix A, Photos 13 and 15; Figure 5-1). When appropriate, a float-activated pump is installed on the VSR sump vat to prevent trench and sump overflow. When the pump is activated, waste from the VSR sump vat is

pumped into nearby 55-gallon drums. The VSR sump vat and drainage units are not RCRA-regulated.

Dates of Operation

Specific start date is unknown; however, it is known to be after 1970. The unit is active.

Waste Managed

Various raw materials (Appendix C) are utilized in the VSR formulating area and exhibit hazardous characteristics (reactive-corrosive-ignitable-toxic). The type of characteristic waste generated in this blending area varies depending on the compound produced. At one time, a large percentage of chromium product was produced in this blending area generating D007 characteristic waste (EP toxic for chromium). However, through the Olin/Drew purchase agreement, Olin Water Services in Kansas City has eliminated the production of chromium products. Currently, the majority of wastes generated in this formulating area include characteristic corrosive waste (D002). A minimal amount of characteristic reactive waste (D003) are also generated (Prouty 1990).

Any aqueous wastes generated in this blending area is from spillage from drum loading operations or non-reusable rinse water from the blending process. Wastes are collected in the trench and sump vat system and retained there until full capacity is reached (Prouty 1990). The wastewater is tested about once or twice a week and the majority is either recycled as make-up water for succeeding batches or discharged down the sewer collection system after neutralization (Bosky 1987; Prouty 1990). All generated waste material is neutralized to meet the pretreatment agreements for Publicly Owned Treatment Works (POTW) discharge parameters outlined in Olin's wastewater discharge permit (#I880) (Appendix E). If analysis indicated that the liquid exhibits hazardous waste characteristics or that the liquid does not meet the sewer discharge parameters, the waste will be placed into a suitable container and stored in the container storage area. As of January 17, 1985, there are two drums of VSR drum waste (D007) stored in the RCRA-regulated container storage area (Appendix D).

Release Controls

Any liquid spillage from the VSR formulating area is either washed down into the trenching and sump vat system or collected with an industrial absorbent and containerized (Bosky 1987). The wastewater collection trench and sump vat units are isolated from the main plant sewer discharge system and act as release control features for the VSR formulating area.

The integrity of the collection trenches are unknown. The sump vat itself is not surrounded by any secondary containment structure; however, it is mounted on a concrete pad base. These units are inspected by Olin on a regular basis.

History of Releases

A KDHE compliance inspection conducted on July 29, 1986, indicated a liquid discharge from the VSR sump vat onto the ground (Smith 1986). A sample obtained from this liquid revealed chromium contamination. After this incident, the facility installed a float activated pump on the VSR sump vat to prevent sump overflow (Fischer 1986). When the pump is activated, wastes from the VSR sump vat would be pumped into nearby 55-gallon drums and placed outside on a wooden pallet. The liquid level was checked daily to assure that the drum would not overflow. The drummed waste would be sampled and analyzed under the same analytical criteria as the sump vat wastes.

During the April 1990 FIT VSI, the float-activated pump and nearby 55-gallon drums for overflow were not in place for the VSR formulating area. However, when chromium products were being manufactured, the VSR overflow system was operational (Dame 1990). Chromium residual that adhered to the VSR floor and drainage system was flushed and cleaned with water and the rinsate was accumulated in 2 to 4 55-gallon drums.

Since the July 1986 RCRA inspection, there has been no other documentation or indications of releases from this SWMU system. Presently, the VSR overflow system is no longer used by Olin Water Services because chromium products are no longer produced. The VSR sump vat and collection trench is monitored from the inside of the VSR Blending Room (Dame 1990). Olin/Drew representatives are considering

removing the VSR sump vat unit and incorporating an automatic on/off valve attachment to the present collection trench system; therefore, drainage could then be released to the plant's sewer discharge outlet.

Observations made during the April 1990 VSI provided no indications of releases from the VSR sump vat and drainage system. However, the paint on the steel containerized sump vat was corroded (Appendix A; Photo 14). A small amount of pasty liquid was noted on the floor in the VSR Blending Room. The blending product tanks were in adequate condition.

5.2.2 Further Information Needs

None required at this time.

5.3 C/F BLENDING ROOM DRAINAGE

5.3.1 Information Summary

Unit Description

The Corrosive or Flammable (C/F) Blending Room consists of a 2,000-gallon blending tank and utility storage tank. The utility storage tank has a capacity of 2,000 gallons and stores raw material for use in the blending process. Both tanks are situated on a monolithically poured concrete base. Finished compounds are packaged in the C/F Blending Room by Olin personnel. Like the VSR Room, the name given to the C/F Blending Room was dedicated 20 years ago. Currently, the area is not restricted to only formulating corrosive or flammable products.

The aqueous waste from this formulation area is collected in an in-floor concrete trench topped with a metal grate (Appendix A; Photo 16). This concrete floor drainage trench measures one foot by two feet and is located in front of the two tanks, running north to south; and along the entrance running east/west (Figure 5-1). The maximum capacity of the C/F drainage system is 100 gallons. An on/off valve located in the center of the C/F drainage system regulates whether the SWMU unit is continuous with the plant's sewer discharge system (Appendix A; Photo 17; Figure 5-1). The C/F Blending Room drainage is not RCRA-regulated.

Dates of Operation

The specific start date is unknown; however, it is known to be after 1970. The unit is active.

Wastes Managed

The C/F Blending Room is used interchangeably with the VSR Formulation Area. Similarly to the VSR Room, a variety of materials (Appendix C) exhibiting hazardous characteristics are used to produce the finished water treatment compounds. The type, analysis, and management of wastes generated in this blending room are also similar to the current operations of VSR Formulating Area (See Section 5.2). It is unknown whether any wastes generated in the C/F Blending Room during the aqueous batching process is recycled as make-up water for succeeding batches. It is thought that the majority of generated wastes after analysis by Olin personnel is discharged directly into the municipal sanitary sewer system (E & E 1990).

Release Controls

If spillage occurs in the C/F Blending Room, it is washed into the 100 gallon collection trench (aqueous materials). Similarly to the VSR room, the trench is embedded into the concrete floor and acts as a containment feature for the C/F Blending Room. The integrity of the trench is unknown. Unlike the VSR room, the collection trench in the C/F Blending Room discharges to the plant's sanitary sewer line. However, a control valve can isolate the C/F Blending Room drainage from flowing continuously with the main sewer line. The trench is emptied only after it reaches full capacity and appropriate analysis has been conducted by Olin personnel. This unit is checked by Olin on a regular basis.

History of Release

Available file information provided no documentation or indication of releases from this unit. Observations made during the VSI provided no indications of releases from this unit. The blending product tanks also appeared to be in good condition.

5.3.2 Further Information Needs

None required at this time.

5.4 DISCHARGE OUTLET TO PUBLICLY OWNED TREATMENT WORKS

5.4.1 Information Summary

Unit Description

The plant discharge drain is a 12-inch piping system which extends throughout the plant building (E & E 1990). The overall layout of the plant's drainage system is unknown; however, the discharge outlet to the POTW is located on the southwest side of the plant building (Figure 5-1). The Sodium Chloride Blending Room collection trench as well as all other trenches and drains in the plant building, except for the C/F and VSR Blending Rooms, are open continuously to the POTW discharge outlet (Prouty 1990). The Soduim Chloride Blending Room/Area has two reinforced plastic storage tanks, each having a 2,000 gallon capacity. Wastes are collected in a collection trench topped with a metal grate running north-south in front of the two blending tanks (Figure 5-1). The Olin Water Services have been reissued a POTW Wastewater Discharge Permit (#1880); the issue date is November 14, 1989; the expiration date is November 14, 1994 (Appendix E). This sanitary/industrial sewer line runs south from the Olin property to the Fairfax Pump Station located at 1520 W. 2nd Street (Gill 1990). This is a non-regulated RCRA unit.

Dates of Operation

The specific startup date is unknown. The unit is active.

Wastes Managed

Any spillage or washdown water from the sodium chloride batching process or any other area in the plant building (except for the C/F and VSR Blending Rooms) are routed to the POTW discharge outlet. Olin representatives have verified that the generated wastes from the sodium chloride blending process is minimal and meets all POTW discharge parameters (Dame 1990; Prouty 1990). Therefore, neutralization does not occur before discharging to the POTW discharge outlet.

A separate blending room called the Powder Blending Room is located west of the VSR Drum-off Room (Figure 5-1). This room is not utilized very much and is where Olin formulates flammable solids (D001) such as sodium sulfite and sodium hydrosulfite (Dame 1990). It is unknown if this blending area maintains a collection trench/drain for spillage or washdown water and discharges to the plant's discharge system. It is thought that dry spillage from drum loading is swept up and placed into a product drum (Bosky 1987).

The Olin Wastewater Discharge Permit has indicated that the permittee will not discharge any wastewater having a pH lower than 5.5 or higher than 9.5 or containing any other prohibited substance or material in accordance with the Code of City Ordinances, Chapter 30, Articles I - VII (Appendix E). Sampling does occur at two periods throughout the year; samples are collected during normal working hours at the POTW outlet before wastewater enters the municipal sanitary sewer system.

The facility's average daily POTW discharge flow for the entire plant is about 450 gallons with the maximum being 600 gallons (Gill 1990).

Release Controls

Similar to the other wastewater collection trenches/drains within the manufacturing plant, the sodium chloride collection trench is embedded into the concrete floor. The trench executes as a release control for this area in the plant building. The integrity of this collection system and the overall plant drainage is unknown. This SWMU is inspected regularly by Olin personnel.

History of Releases

Available file information provided no indication of any spills from this unit. In addition, the floor in the Sodium Chloride Blending Room was clean and the blending tanks appeared in good condition. Throughout the plant building, good housekeeping practices were observed. It has been reported that the Olin Water Services has not been deficient on its wastewater permit requirement for the past two years. In addition, Olin has probably never exceeded the limitations outlined

in the POTW permit (Gill 1990). Samples collected by Olin personnel in January 1990 at the POTW discharge outlet indicate that the facility is within discharge limitations (Appendix F).

5.4.2 Further Information Needs

A map illustrating the overall layout of the plant building's drainage system would be helpful to completely assess this SWMU.

5.5 DUMPSTERS

5.5.1 Information Summary

Unit Description

There are two dumpsters located in the production yard. These two solid waste disposal units are adjacent to the loading dock area southeast of the plant building (Figure 5-1). Both nonhazardous waste receptacles are made of steel. The dimensions of both are about 6 feet high by 10 feet wide by 5 feet deep. The hauling company is Shostak Iron and Metal Company, telephone 321-9210. These units are SWMUs but are not regulated under RCRA.

Dates of Operation

The specific start date is unknown. The unit is active.

Waste Managed

Nonhazardous solid wastes are disposed in these two SWMU units. The dumpster located east of the south loading dock contains solid wastes such as scrap building materials and empty unusable drums, which have been triple rinsed and crushed (Appendix A; Photos 10 and 11). The dumpster located in the southeast corner of the same loading dock usually contains sanitary trash, plastic, and some crushed, triple-rinsed drums (Prouty 1990). The drums are recycled until they are no longer usable. The drum rinsing process takes place directly in the formulating batch tanks. A manlift reaches to the top of the tank where an Olin employee rinses and cleans the drum (Prouty 1990). The non-hazardous solid waste contained in these dumpsters are periodically

disposed at the Johnson County Landfill. The amount of waste generated varies; it is usually less than two tons a year (E & E 1990).

Release Controls

These SWMUs are made of steel and rest on a monolithically poured concrete slab. These units are inspected regularly by the Olin personnel.

History of Releases

File information provided no documentation of releases from the units. Observations made during the VSI indicated no releases from these units.

5.5.2 Further Information Needs

None required at this time.

5.6 SATELLITE ACCUMULATION AREA

5.6.1 Information Summary

The Olin Water Services operates an on-site laboratory in the plant building (Figure 5-1). This lab is not utilized to a great extent and has become strictly a Quality Control (QC) lab (Dame 1990). Presently, the lab is used to conduct disposal analysis (testing waste generated by Olin), water analysis for customers, and some biochemical analysis. Small amounts of "F-listed" chlorinated solvents (methylene chloride) are being used in the Olin laboratory to clean lab ware. The resulting waste is accumulated in five-gallon safety cans and stored temporarily under the lab sink; this has been designated a satellite accumulation area. When the container is full, it is transferred to a 30-gallon drum which is also stored in the laboratory (Dame 1990). When the 30-gallon drum reaches capacity, which takes several years, it is stored in the permitted hazardous container storage area until shipment. These temporary waste containers are SWMUs, but are not regulated under RCRA. The FIT was unable to determine the start-up date of this SWMU, but the unit is currently active. This unit has no release controls. No releases or housekeeping problems were observed during the VSI.

5.6.2 Further Information Needs

None required at this time.

5.7 AREA OF CONCERN

5.7.1 Information Summary

There are two above-ground product storage tanks (capacity 10,000 gallons) located on the east side of the production plant (Figure 5-1). The south tank is empty, but once contained flammable material (D001) (Appendix A; Photo 9). This tank has been empty since the Drew/Olin purchase agreement in December 1989, and January 1990. The north tank currently contains sodium hydroxide (Appendix A; Photo 8). Prior to the April 1990 VSI, Jim Fischer of KDHE reported to FIT that during his most recent compliance inspection he found soil discoloration near the north product storage tank (sodium hydroxide tank). However, during the April 1990 VSI, no evidence of a spill or pooling liquid was observed. It should be noted that the stained area may have been washed away by precipitation. The FIT was unable to determine the start-up dates of these two tanks. Currently, there are no secondary containment features surrounding the tanks. Future plans are to remove the two product storage tanks and replace them with a tank farm, consisting of about 16 5,600-gallon to 9,600-gallon storage tanks. An environmental audit was conducted by Drew representatives, as outlined in the December Drew/Olin purchase agreement. In conjunction with the audit, four to five monitoring wells were installed near the above-ground product storage tanks (Prouty 1990). Olin representatives do not know if samples have been collected and analyzed from these wells.

5.7.2 Further Information Needs

The Drew environmental audit results should be reviewed to assess if any potential problems are occurring on the east side of the production plant.

SECTION 6: SUMMARY OF SITE VISIT

DRAFT

The VSI of Olin Water Services was conducted on April 27, 1990. The VSI began at 0900 hours and was completed by 1230 hours. The inspection was conducted by FIT personnel Patty Roberts and Otavio Silva, EPA/RCRA representative Mark Matthews, and KDHE/RCRA representative Paul Cahoon. The Olin Water Services representatives were William Dame and Larry Prouty. William Olasin from the Ashland Chemical Company was also present. The VSI began with an inspection of the warehouse, which serves as a shipping and receiving area. This warehouse also houses some administrative offices. No SWMUs were identified in this building.

After inspecting the inside of the warehouse, the FIT inspected the east perimeter of the plant building where two 10,000-gallon product storage tanks were located. Next, FIT inspected the interior of the plant facility, which houses all the chemical formulating areas as well as the Olin laboratory. The RCRA-regulated hazardous container storage area located in the production yard was also inspected. After the reconnaissance of the plant facility and its perimeter, six SWMUs and one area of concern as detailed in Section 5 were identified. Photo documentation was conducted during the VSI and is included as Appendix A. No indication of any releases were observed by the FIT during the VSI.

SECTION 7: SUMMARY AND CONCLUSIONS

DRAFT

The E & E/FIT was tasked under the U.S. EPA's EPI program to conduct a background review and VSI of the Olin Water Services-Olin Corporation site located in Kansas City, Kansas. The VSI was conducted on April 27, 1990, in coordination with RCRA and company officials. The scope of the EPI/PA was to identify, characterize, and determine releases from SWMUs at the facility.

Olin Water Services has been in operation since 1970 and manufactures chemicals for industrial water treatment facilities. Processes include batch blending of approximately 150 different raw materials, to formulate approximately 250 water treatment compounds. The waste generated during this blending process can vary and exhibits hazardous characteristics, such as ignitability, corrosivity, reactivity, and/or toxicity. Wastes generated during the blending process consist of spillage from loading operations or rinsewater; most of this waste is recycled or discharged down the sanitary sewer system after analysis designates that it is within the parameters outlined under the POTW permit (#I880). The majority of wastes that are accumulated is from raw material and finished products that are unuseable as off-specification. These various wastes as well as any other designated hazardous waste are stored in the RCRA-regulated hazardous container storage area. Olin operates as a storage facility under a Part B Permit notification. In addition to being a storage facility, the Olin site has been classified as a Kansas generator; that is, the facility generates between 25 and 1,000 kilograms of hazardous wastes per month.

The FIT identified six SWMUs during the VSI at the facility. The SWMUs were identified and a brief description of each is as follows.

Hazardous Waste Container Storage Area

This SWMU is a 3-sided cinder block building located in the production yard. The maximum number of drums stored in this facility is not to exceed 200 55-gallon drums. Both hazardous and non-hazardous (liquid and solids) wastes are stored in this storage area for a

long-term basis. Future plans are to dispose of all hazardous wastes in the container storage area.

VSR Sump Vat and Drainage

This SWMU consists of an outside sump vat and in-floor trenches from the VSR Blending and Drum-off rooms. When appropriate an activated pump is installed on the VSR sump vat and overflow is pumped into nearby 55-gallon drums. Spill over, washdown water, or any other wastes from the chemical formulating process is collected in this self-contained drainage system. The generated waste is analyzed and the majority is either recycled or discharged down the sanitary sewer collection system after neutralization. If determined hazardous it is retained in the permitted container storage area.

C/F Blending Room Drainage

This SWMU comprises an in-floor concrete trench topped with a metal grate encompassing the majority of the C/F Blending Room. This drainage system intercepts waste spillage or washdown water and has a maximum capacity of 100 gallons. An on and off valve connected to the C/F trench regulates, if this unit is continuous with the municipal sanitary sewer collection system. Generated wastes are analyzed and managed in the same manner as the VSR Blending Room.

POTW Discharge Outlet

The plant discharge drain is a 12-inch piping system which extends throughout the plant building. This drainage system intercepts spill over or washdown water from all concrete areas in the plant building except for the VSR and C/F Blending Rooms. The discharge outlet to the POTW is located on the southwest side of the plant building. Wastewater is analyzed and discharged to the Kansas River under the auspices of a pretreatment agreement with the city.

Dumpsters

This SWMU consists of two steel non-hazardous solid waste receptacles. The amount of solid waste varies throughout the year and consists mostly of scrap building material and clean, unuseable drums.

Satellite Accumulation Area (lab wastes)

This unit is inside the Olin laboratory and consists of a 5-gallon safety can and a 30-gallon drum of collected chlorinated solvents (F001). F001 wastes are stored in the 30-gallon drum until full, then sealed and moved to the permitted container storage area, until shipment.

Areas of Concern

During the VSI, two above-ground product storage tanks located on the east side of the production plant, were also inspected. A concern has been noted by a State official pertaining to an alleged spill around the northern-most storage tank (sodium hydroxide). However, FIT observed no evidence of a spill or potential problem with this area.

In 1986, a release did occur from the VSR sump vat located between the plant and the southern-most storage tank. The resulting problem revealed chromium contamination. To mitigate the problem, Olin formulated an overflow pumping and temporary storage system during the production of chromium products in the VSR blending area. No other releases around the sump vat area have been documented.

Olin was purchased by Drew Industrial Division in December 1989, and has future plans to construct a 16-tank farm in the east section of the production plant. Drew is conducting an environmental audit, including the installation of monitoring wells in this eastern section of the Olin property. The results of this audit would be helpful in assessing if this property area is a notable potential problem.

Observations made during the April 1990 VSI of the above-mentioned SWMUs and the facility as a whole indicate that the operational procedures are of good standing. In general, the plant building and production yard was clean and well organized. Waste handling practices were acceptable, with no releases or spills noted.

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APPENDIX A

SITE PHOTOGRAPHS

Ecology and Environment, Inc.

PHOTOGRAPHIC RECORD

SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA

No: 1
Subject
Olin Water Services Plant Building and Warehouse.

Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1235 hours

Direction
Southeast

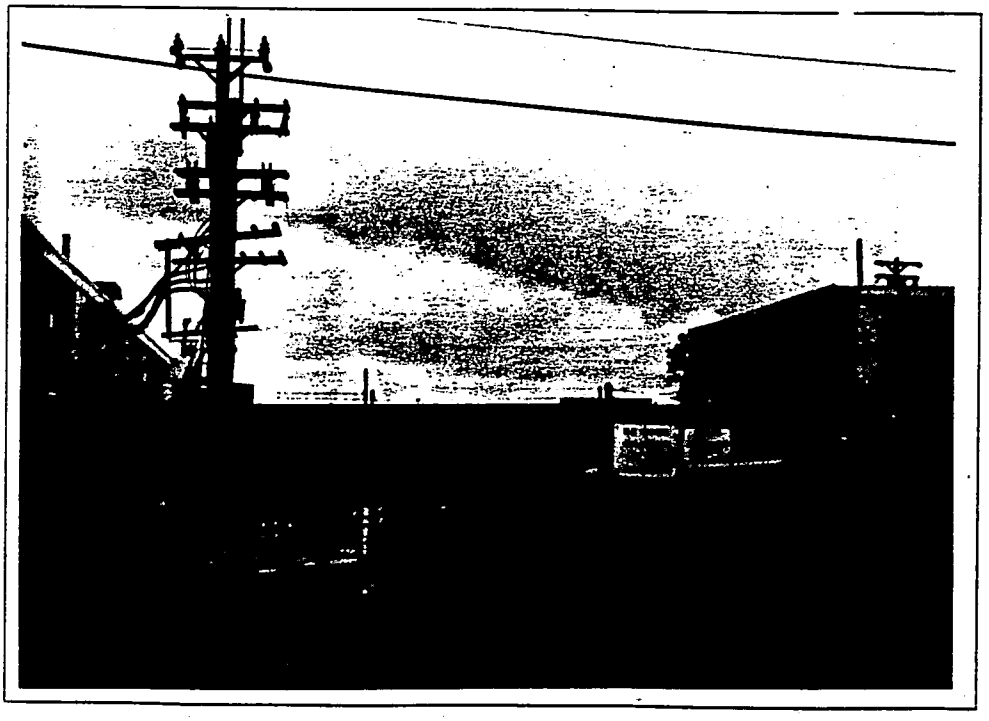
No: 2
Subject
Production Yard

Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1237 hours

Direction
East



Ecology and Environment, Inc.

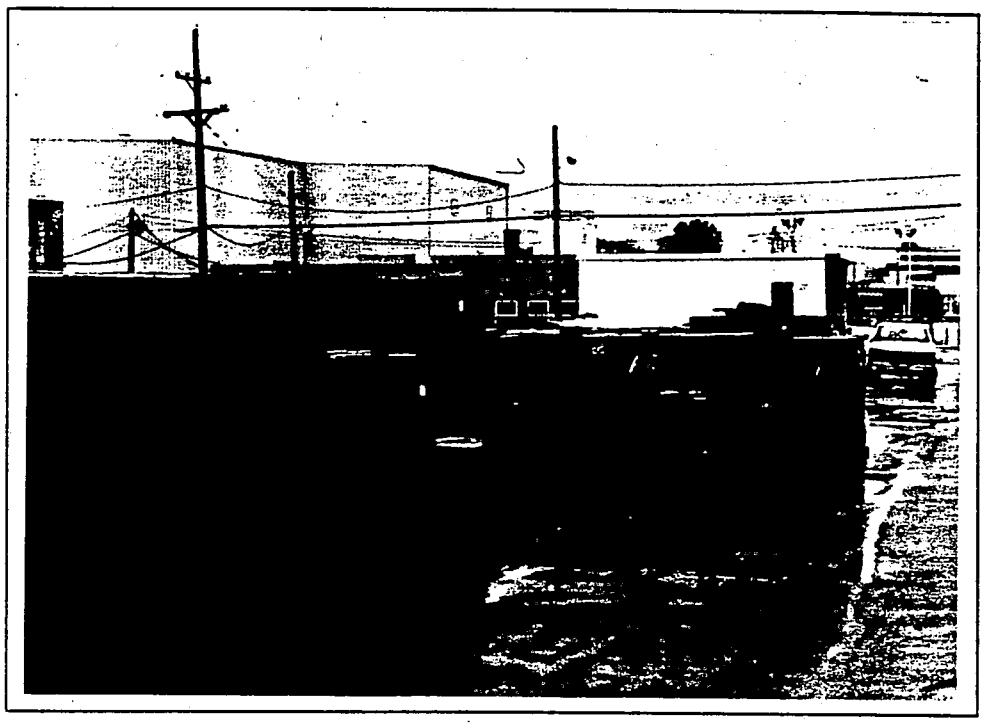
PHOTOGRAPHIC RECORD

SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA

No: 3
Subject
Production Yard Empty Drum Storage Area.



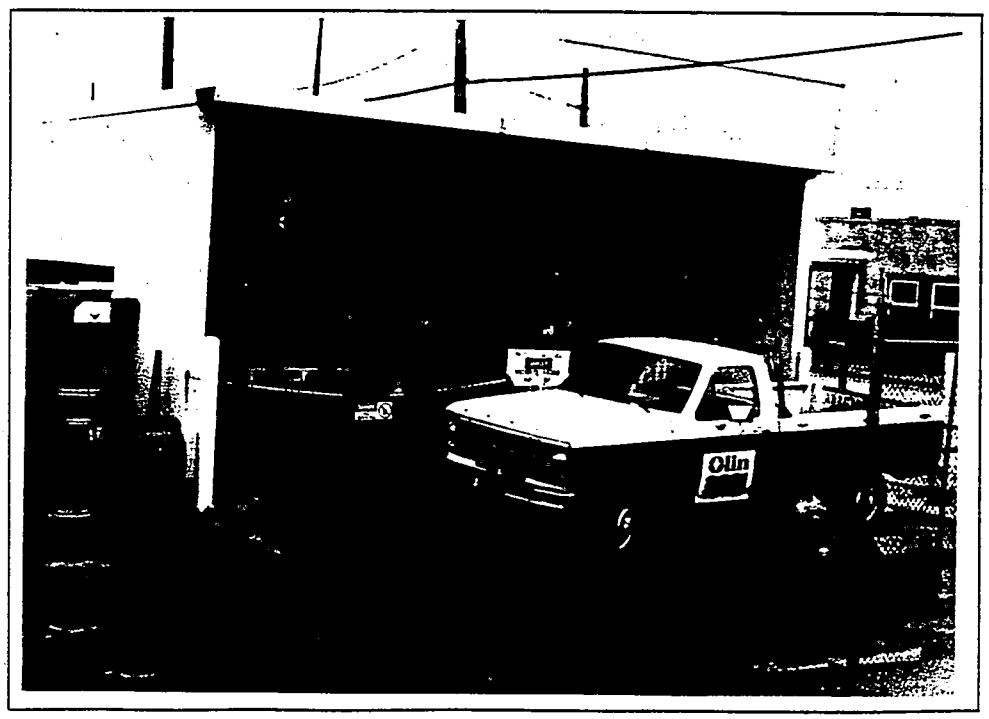
Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1145 hours

Direction
Southwest

No: 4
Subject
Hazardous Waste Container Storage Area



Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1130 hours

Direction
Southwest

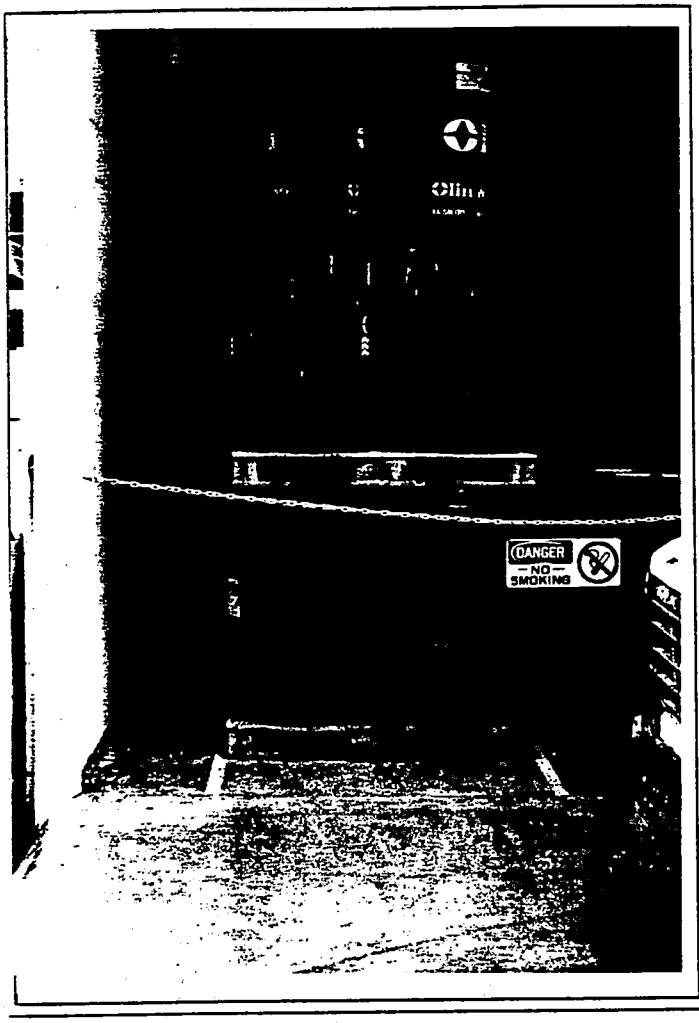
Ecology and Environment, Inc.

PHOTOGRAPHIC RECORD

SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA



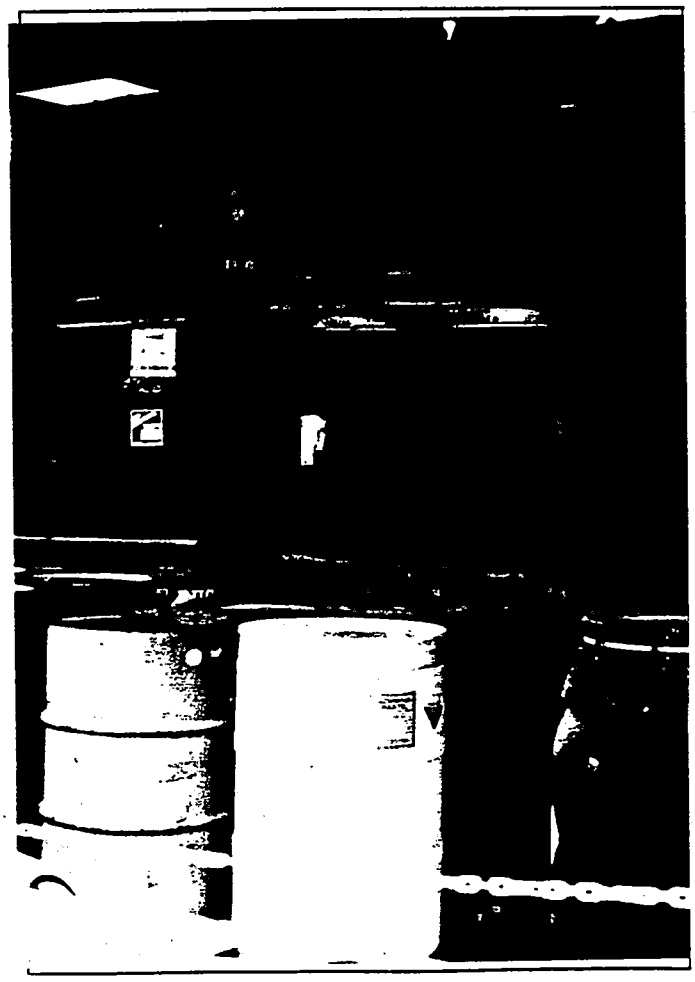
No: 5
Subject
First row of the Hazardous Waste Container Storage Area.

Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1132 hours

Direction
South



No: 6
Subject
Second and third rows of the Hazardous Waste Container Storage Area.

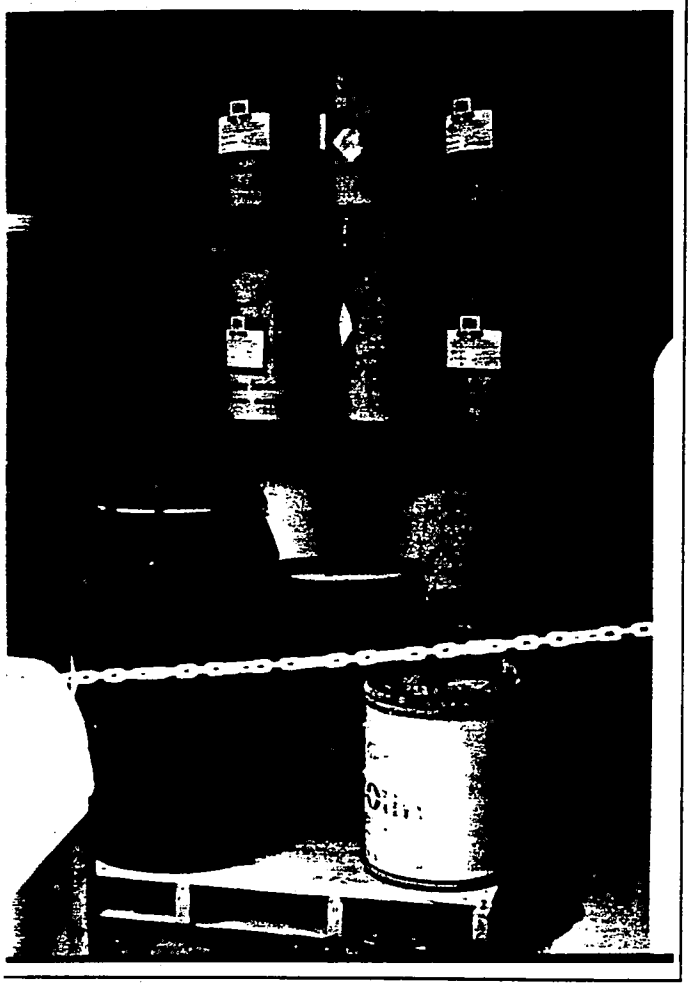
Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1134 hours

Direction
Southeast

PHOTOGRAPHIC RECORD



SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA

No: 7
Subject
Fourth row of the Hazardous Waste Container Storage Area.

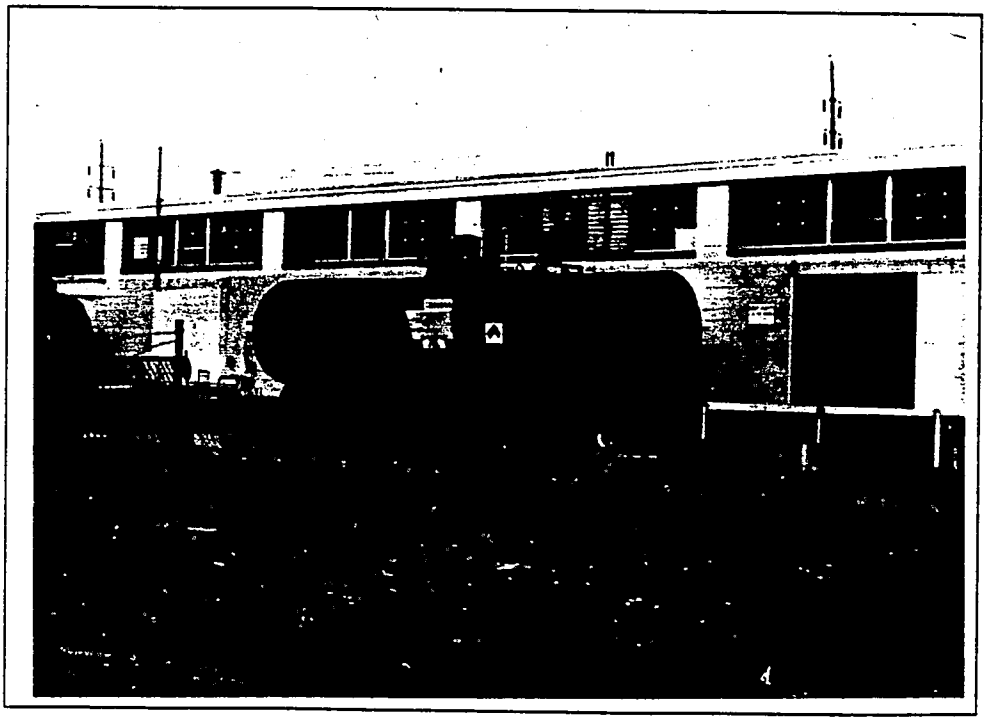
Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1136 hours

Direction
South

o: 8
ubject
Sodium hydroxide tank. The tank capacity is 10,000 gallons.



hotographer
Otavio Silva

itness
Patty Roberts

ate/Time
4/27/90 - 1150 hours

irection
Southwest

Ecology and Environment, Inc.

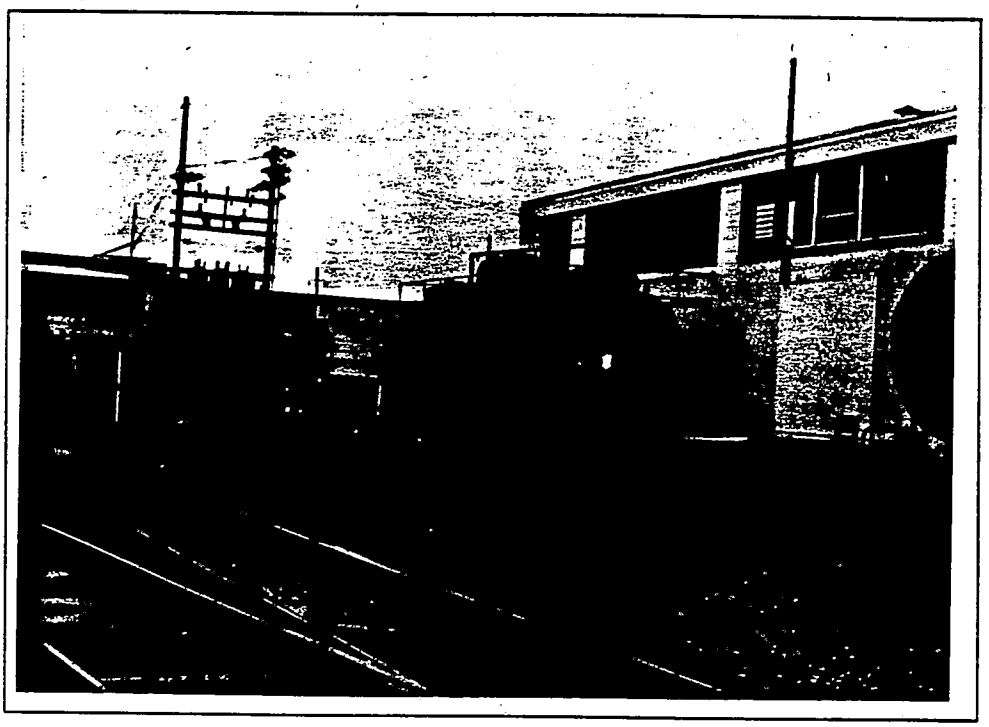
PHOTOGRAPHIC RECORD

SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA

No: 9
Subject
Empty product storage tank. The tank once contained flammable material. Capacity is 10,000 gallons.



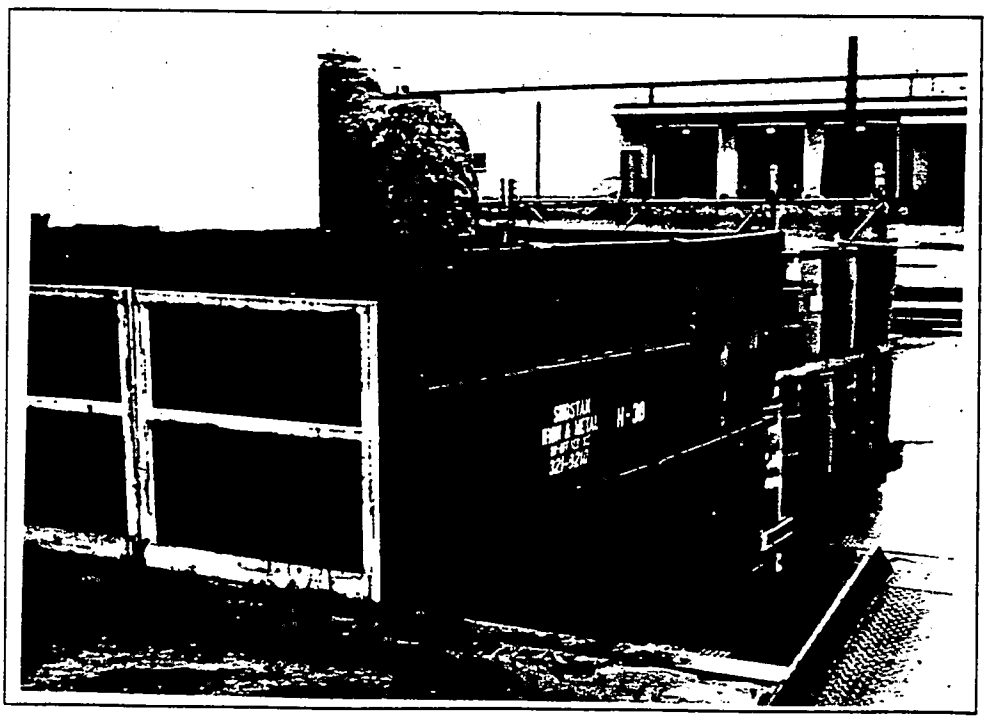
Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1152 hours

Direction
Southwest

No: 10
Subject
Dumpster for non-hazardous solid waste disposal.



Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1145

Direction
Northeast

PHOTOGRAPHIC RECORD

SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA

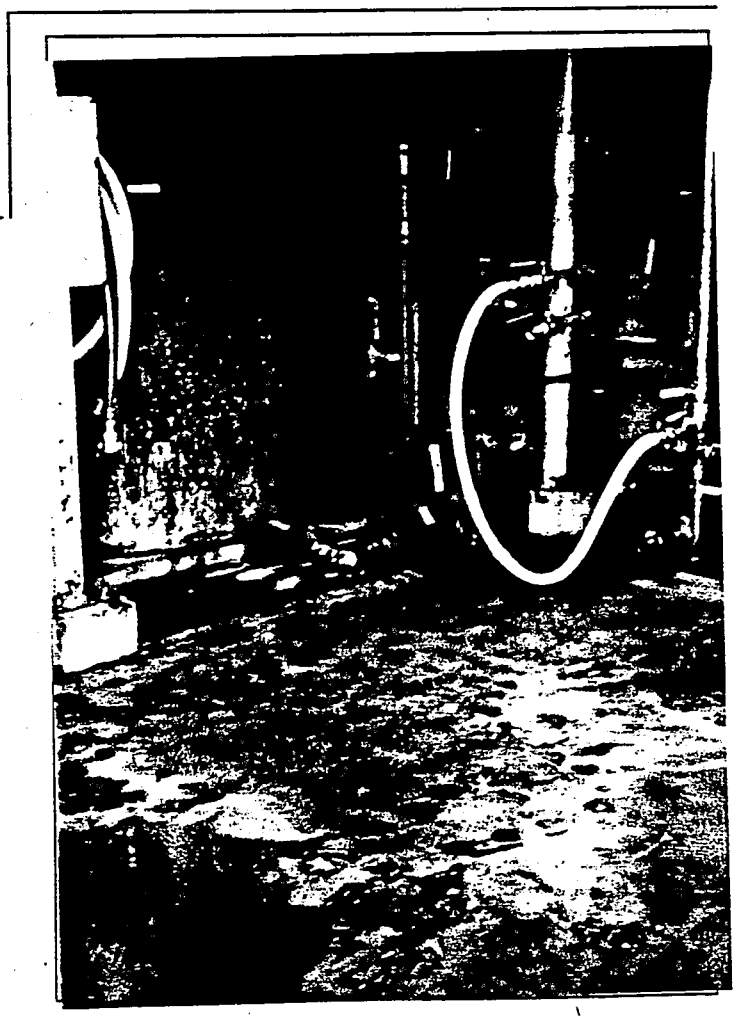
No: 11
Subject
Contents of dumpster.

Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1147 hours

Direction
East



No: 12
Subject
Volatile Steam Return (VSR) blending room. In the background is VSR blending tank (capacity 2,000 gallons).

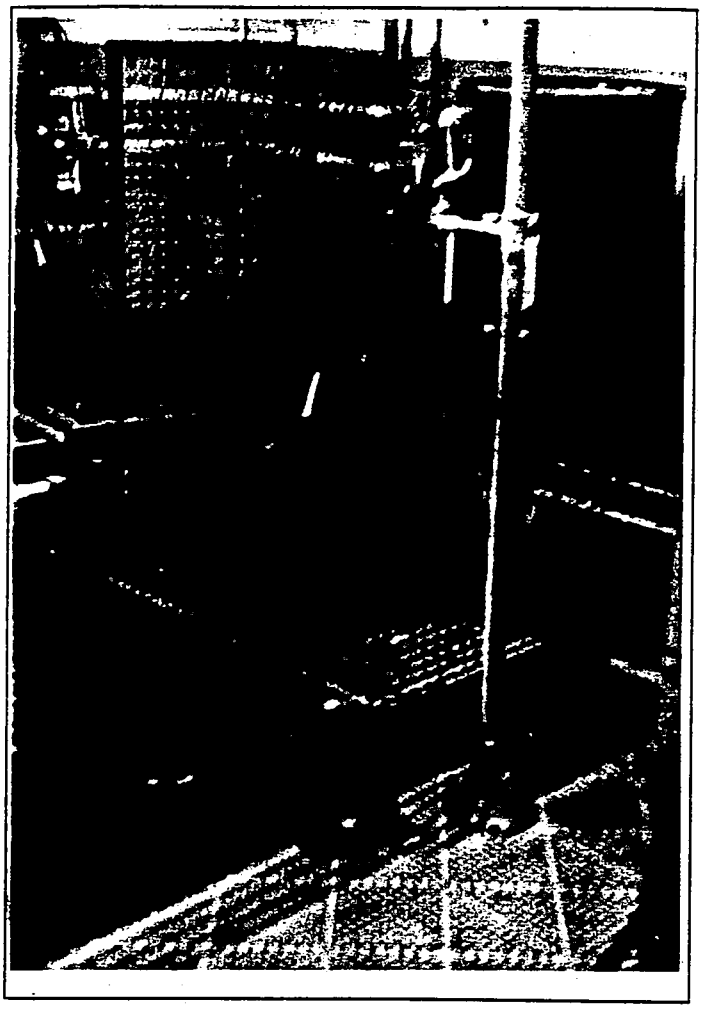
Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1115 hours

Direction
Northeast

PHOTOGRAPHIC RECORD



SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA

No: 13
Subject
VSR Drum-off room. In background is the drainage outlet which leads to the containerized sump vat.

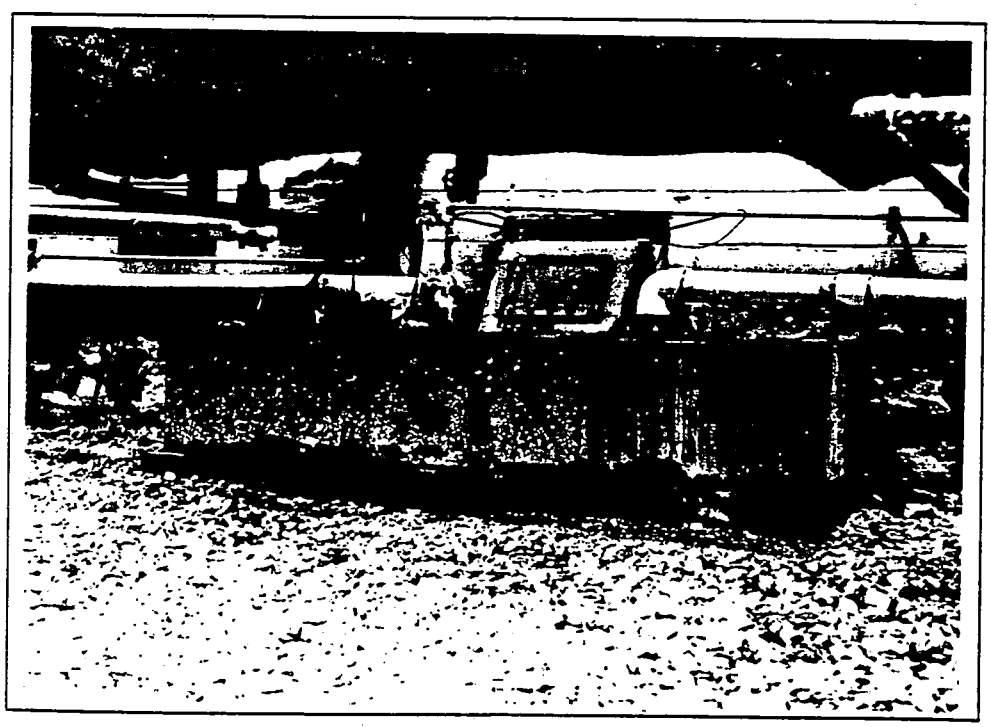
Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1117 hours

Direction
Southeast

No: 14
Subject
VSR sump vat.



Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1107 hours

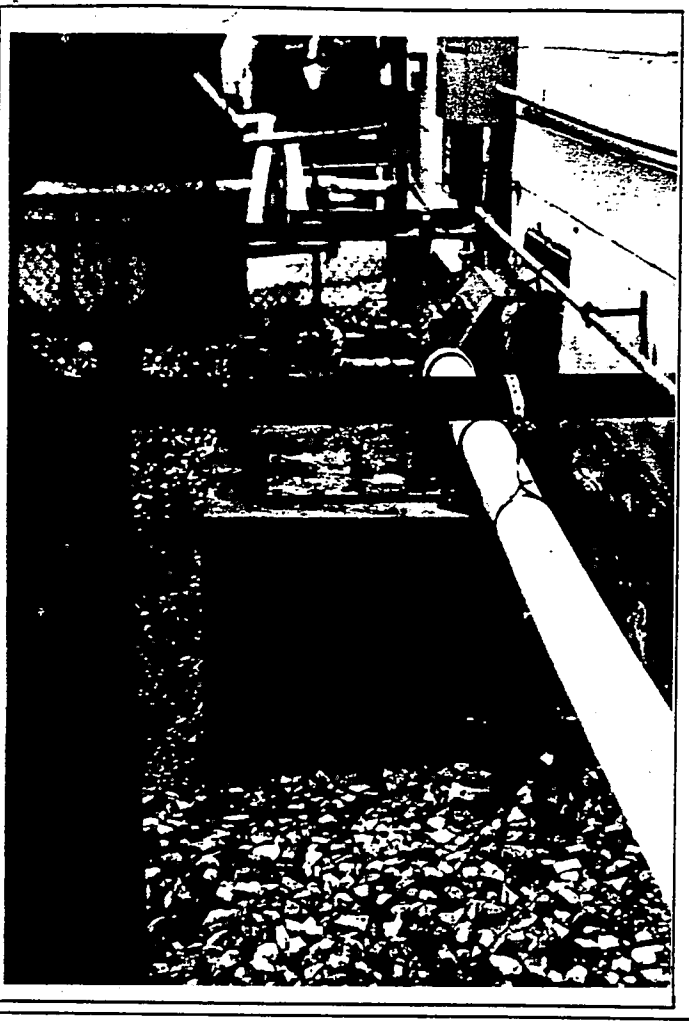
Direction
West

PHOTOGRAPHIC RECORD

SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA



No: 15
Subject
VSR sump vat and piping system from VSR Drum-off room.

Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1109 hours

Direction
South

No: 16
Subject
Corrosive or Flammable C/F) blending room. In background is the C/F blending tank (capacity 2,000 gallons).

Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1120 hours

Direction
Southwest

PHOTOGRAPHIC RECORD

SITE NAME: Olin Water Services

SITE LOCATION: Kansas City, Kansas

TDD/PAN#: F-07-9003-005/FKS0285RA

No: 17
Subject
C/F Blending room waste collection trench. Blue object is the on and off valve for disposal to the Fairfax sanitary sewer system.

Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1122 hours

Direction
Northwest

No: 18
Subject
Sodium Chloride Blending room waste collection trench. Further north is the POTW Discharge outlet to the Fairfax sanitary sewer system (not shown in photograph).

Photographer
Otavio Silva

Witness
Patty Roberts

Date/Time
4/27/90 - 1125 hours

Direction
West

APPENDIX B

EPA PRELIMINARY ASSESSMENT FORM 2070-12

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
KS	KSD000203638

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Ashland Chemical, Inc. (Olin)	3155 Fiberglass Road				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Kansas City	KS	66115	Wyandotte		
09 COORDINATES **LATITUDE**	**LONGITUDE**				
39° 08' 47.0" N	094° 36' 58.0" W				

10 DIRECTIONS TO SITE (Starting from nearest public road)

From I-635, exit on Kansas Highway 5 east. Stay on 5 Highway until Sunshine Road. Continue east on Sunshine Road until Fiberglass Road. Site is located at the intersection of Sunshine and Fiberglass roads.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)			
Drew Inc. (Ashland Chemical Co.)	P.O. Box 2219			
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**	
Columbus (Dublin)	OH	43216	(614) 889-3065	
07 OPERATOR (If known and different from owner)	**08 STREET (Business, mailing, residential)**			
Ashland Chemical Co.	3155 Fiberglass Road			
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**	
Kansas City	KS	66115	(913) 621-6410	

13 TYPE OF OWNERSHIP (Check one)

X A. PRIVATE ___B. FEDERAL: _____ (Agency name) ___C. STATE ___D. COUNTY ___E. MUNICIPAL

___F. OTHER: _____ (Specify) ___G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

X A. RCRA 3001 DATE RCVD: 11/18/80 MO/DAY/YR ___B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RCVD: MO/DAY/YR ___C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION BY(Check all that apply)

X YES DATE 04/27/90 MO/DAY/YR ___NO

X A. EPA X B. EPA CONTRACTOR X C. STATE ___D. OTHER CONTRACTOR

___E. LOCAL HEALTH OFFICIAL ___F. OTHER: _____ (Specify)

CONTRACTOR NAME(S): Ecology and Environment, Inc.

02 SITE STATUS (CHECK ONE)	03 YEARS OF OPERATION		
X A. ACTIVE ___B. INACTIVE ___C. UNKNOWN	1970 BEGINNING YEAR	current ENDING YEAR	___UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

This facility generates hazardous wastes from the preparation of liquid and powder water treatment formulations. Wastes identified and stored at the facility include D001 to D003, and D007 characteristic wastes. Various U-listed wastes could also be present.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

No imminent threat to the environment and/or population. The VSR Sump should be routinely inspected for failure as no secondary containment is present.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous conditions and Incidents)

___ A. HIGH (Inspection required promptly) ___ B. MEDIUM (Inspection required) ___ C. Low (Inspect on time available basis) X D. NONE (No further action needed. Complete current disposition form) *Facility routinely inspected by RCRA

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)			03 TELEPHONE NUMBER
Mark Matthews	EPA/RCRA			(913) 551-7635
04 PERSON RESPONSIBLE FOR ASSESSMENT	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER**	**08 DATE**
Patty Roberts	E & E	FIT	(913) 432-9961	04/26/91 MO/DAY/YR

Ashland Chemical, Inc.
(Olin Water Services)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 – WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
KS	KSD00020368

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- X A. SOLID
- X B. POWDER, FINES
- ___C. SLUDGE
- ___D. OTHER (Specify)
- ___E. SLURRY
- X F. LIQUID
- ___G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS
- CUBIC YARDS
- NO. OF DRUMS ~ 125

03 WASTE CHARACTERISTICS (Check all that apply)

- X A. TOXIC
- X B. CORROSIVE
- ___C. RADIOACTIVE
- ___D. PERSISTENT
- ___E. SOLUBLE
- ___F. INFECTIOUS
- ___G. FLAMMABLE
- X H. IGNITABLE
- ___I. HIGHLY VOLATILE
- ___J. EXPLOSIVE
- X K. REACTIVE
- X L. INCOMPATIBLE
- ___M. NOT APPLICABLE

III. WASTE TYPE (by waste characteristics)

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	unknown	N/A	[methylene chloride, hydrazine, n-butyl alcohol, 1,2-dichlorobenzene]
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	unknown	N/A	[pentachlorophenol, ethylenebis, salts, and esters]
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	unknown	N/A	ethylenebisdithiocarbamic acid
BAS	BASES			
MES	HEAVY METALS	unknown	N/A	chromium

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	chromium	7440-47-3	drums	unknown	N/A
SOL	n-butyl alcohol	71-36-3	drums	unknown	N/A
SOL	1,2-dichlorobenzene	95-50-1	drums	unknown	N/A
SOL	[ethylenebisdithiocar-	111-54-6	drums	unknown	N/A
	amic acid]				
OCC	[ethylenebis salts and	[not available]	drums	unknown	N/A
	esters]				
SOL	hydrazine	302-01-2	drums	unknown	N/A
OCC	pentachlorophenol	87-86-5	drums	unknown	N/A
SOL	methylene chloride	75-09-2	drums	unknown	N/A

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA/RCRA files
April 27, 1990 E & E/FIT VSI

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
KS	KSD00020368

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ___ A. GROUND WATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported or known to date.

01 ___ B. SURFACE WATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported or known to date.

01 ___ C. CONTAMINATION OF AIR — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported or known to date.

01 ___ D. FIRE/EXPLOSIVE CONDITIONS — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported or known to date.

01 ___ E. DIRECT CONTACT — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported or known to date.

01 X F. CONTAMINATION OF SOIL — 02 X OBSERVED (DATE: unknown) X POTENTIAL ___ ALLEGED
03 AREA POTENTIALLY AFFECTED: unknown (Acres) 04 NARRATIVE DESCRIPTION
The State has reported that the soil may be contaminated under the product (sodium hydroxide) storage tank, located east of the production plant.

01 ___ G. DRINKING WATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported or known to date.

01 ___ H. WORKER EXPOSURE/INJURY — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported or known to date.

01 ___ I. POPULATION EXPOSURE/INJURY — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported or known to date.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 – DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
KS	KSD00020368

II. HAZARDOUS CONDITIONS AND INCIDENTS (CONTINUED)

01 ___J. DAMAGE TO FLORA — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or known to date.

01 ___K. DAMAGE TO FAUNA — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

None reported or known to date.

01 ___L. CONTAMINATION OF FOOD CHAIN — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or known to date.

01 ___M. UNSTABLE CONTAINMENT OF WASTES — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

(Spills/runoff/standing liquids/leaking drums)

03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

None reported or known to date.

01 ___N. DAMAGE TO OFF-SITE PROPERTY — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or known to date.

01 ___O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or known to date.

01 ___P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or known to date.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None reported or known to date.

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

PA Form may be updated during Final Report submission to EPA.

V. SOURCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)

EPA/RCRA files
April 27, 1990, E & E/FIT VSI

APPENDIX C

RAW MATERIAL NUMERICAL INDEX

RAW MATERIAL

NUMERICAL INDEX

4/12/90

Raw Material Code Number	Inventory Name	CAS No.
0004	Acetic Acid	64-19-7
0009	ACRYSOL® QR-1086	N.A.
0010	Actrafoam S	N.A.
0011	Aerosol GPG	577-11-7
0013	Agefloc WT-40	26062-79-3
0014	Agefloc A-50	42751-79-1
0015	Agefloc CF-50	1327-41-9
0016	Alumina-Hydrated	21645-51-2
0017	AMP-95	124-68-5
0018	Polyacrylic Acid	9003-01-4
0019	ALCOMER 123L	64742-47-8, 8032-32-4
0020	Aluminum Chlorohydrate Sol., 50%	1327-41-9
0021	Aquatreat DNM-30	128-04-1 & 142-59-6
0022	Aqua Ammonia	1336-21-6
0029	American Cyanamid E-1883	N.A.
0033	AF-10-FG	N.A.
0035	ARCO S-SMA-1000L/PERCHEM 5786/ VERSA-TL 7	(68037-40-1) 1310-73-2 - Sod. Hydrox.
0039	Armeen 18D	124-30-1
0040	BTC 1010	7173-51-5
0044	BARDAC 205M	68424-95-5
0045	Bayhibit AM	37971-36-1

0046	BARQUAT 4240Z	5197-80-8
0050	Belclene 200	26099-09-2
0051	Belclene 500	71050-62-9
0053	Belcor® 575	23783-26-8
0054	Biomet TBTO	56-35-9
0057	Bio-Terge PAS-8S	5324-84-5
0089	BTC-2125	68391-01-5* & 68956-79-6*
0091	Butyl Alcohol	71-36-3
0092	Poly-Solv EB	111-76-2
0106	CH-22HM	8002-05-9, 1309-48-4, 21645-51-2
0108	Caustic Soda	1310-73-2
0109	Calcium Nitrate	10124-37-5
0111	Calgon RP-1240-10	N.A.
0112	Caustic Soda	1310-73-2
0113	Caustic Potash Liquid	1310-58-3
0115	CDB Clearon	51580-86-0
0121	12% Manganese CEM-ALL	15956-58-8, 27253-32-3
0122	Chem-Solv DM	111-77-3
0123	Chem-Solv DB	112-34-5
0124	Chesnut Extract	1401-55-4
0125	CMC- 7LBT	9004-32-4
0126	Cobratec 99	95-14-7
0127	Cobratec TT-50 S	64665-57-2
0128	Chromic Acid	1333-82-0
0129	Citric Acid	77-92-9
0130	Cobalt Sulfate	10124-43-3
0136	Copper Sulfate	7758-99-8

0137	Copper Sulfate Liquid	7758-98-7
0139	Chlorine	7782-50-5
0143	POLY-TERGENT® CS-1	N.A.
0145	Cupric Nitrate, Trihydrate	10031-43-3
0148	Cyclohexylamine	108-91-8
0149	Cyanamer P-35	9003-06-9
0150	Cyanamer P-35	9003-06-9
0151	Cyanamer P-38	9003-06-9
0155	Dequest 2000/PHOS 2	6419-19-8
0156	Dequest 2010	2809-21-4
0158	Dequest 2005	2235-43-0
0159	Diethyl Ethanol Amine	100-37-8
0160	Disodium Phosphate	7558-79-4
0161	Disodium EDTA	139-33-3
0163	Ethylene Glycol, Inhibited	107-21-1
0164	POLY-TERGENT® 2EP	28519-02-0, 25167-32-2, 7757-82-6
0166	DANTOBROM® RW Biocide	126-06-7, 118-52-5 ACCESS #54445
0167	Diethylhydroxylamine (DEHA) (Hydroquinone)	3710-84-7 123-31-9
0180	Hampene 220	64-02-8
0183	Ethomeen 18/60	26635-92-7
0184	Ethomeen S/15	61791-24-0
0189	Exxon Aromatic 200	64742-94-5 64742-06-9 91-20-3
0192	Ferrous Sulfate/Heptahydrate	7782-63-0
0193	Ferric Chloride Solution	7705-08-0
0194	Ferric Sulfate Solution 50%	10028-22-5

		7664-93-9
0204	GOOD-RITE® K-XP82	9003-01-4
0206	GUARTEC CIP	68611-04-1
0209	HAMP-ENE® ACID	60-00-4
0211	HAMP-ENE® 100S	64-02-8
0212	Hampene 100/Vin Keel 100	64-02-8
0214	Hexametaphosphate (OLIN POLYPHOS® 62533-93-1)	68915-31-1
0226	Hybase M-12	68476-30-2 61789-87-5 546-93-0
0236	Hydrochloric Acid, Inhibited	7647-01-0
0237	Hydrogen Peroxide, 50%	7722-84-1
0239	Hydrazine 35%	302-01-2
0240	Hydroxyacetic Acid	79-14-1
0261	Kathon 886F	26172-55-4 2682-20-4
0273	Magnifloc 905N	N.A.
0275	Magnifloc 1820A	N.A.
0276	Magnifloc 587C/Agefloc WT-20 N.A. 2606-79-3	
0277	Magnifloc 581C/ CPS Agefloc A-50 HV	N.A. 42751-79-1
0283	Magnifloc 515-C	N.A.
0284	Magnifloc 1849-A	N.A.
0285	Magnifloc 1906N	N.A.
0286	Magnifloc 1596C	64742-47-8, 7783-20-2
0291	Maracell XE	68131-31-7
0293	Marasperse N-22	8061-51-6
0294	Mazu DF 210S	7732-18-5, 9003-04- 9005-67-8, 9004-65- 57-11-4, 1338-41-6 63148-62-9, 7631-86 50-00-0, 99-76-3 94-13-3, 57-55-6

0295	MECT 5	21564-17-0, 6317-18-6
0296	MECT 10	21564-17-0, 6317-18-6
-	Methyl Violet Indicator	N.A.
0304	Monosodium Phosphate	7558-80-7
0305	Monofax 1214	N.A.
0308	Morpholine	110-91-8
0312	Muriatic Acid	7647-01-0
0317	Narlex D-72	68037-40-1
0318	National Starch FLOC-AID 19	N.A.
0330	O B Hibit	1303-96-4, 532-32-1 7758-87-4, 7758-29-4 9003-11-6
0336	Sodium Chlorate (OPM-2)	7775-09-9
0340	PERCHEM™ 550	26062-79-3
0341	CALLAWAY 3379	N.A.
0342	Percol 710	64742-52-5 8032-32-4
0343	Percol 780	(8012-95-1 mineral oi
0346	Percol LT 26	N.A.
0347	Percol 757	N.A.
0348	Percol 778	N.A.
0349	Percol LT 27	N.A.
0350	Petro AG Special	26264-58-4 27178-87-6
0353	Magnifloc 1594C	8002-05-9
0360	Phosphoric Acid	7664-38-2
0361	Phosphonic Acid, Green (70%)	7664-38-2
0364	Pluronic F-68	9003-11-6
0365	Olin Poly G WS-5100	9038-95-8
0368	Polyphosphoric Acid	8017-16-1
0370	Potassium Carbonate	584-08-7

0371	Potassium Hydroxide, Crystals	1310-58-3
0372	Potassium Tetra Borate	1332-77-0
0378	Praestol K 225 FL	N.A.
0379	Praestol K 280 FL	64742-47-8 9016-45-9
0380	Praestol K133L	64742-47-8 67-63-0
0381	Praestol A 310 FL	N.A.
0387	PRO FLOC P (Chitosan)	9012-76-4
0388	Propylene Glycol, Inhibited	57-55-6
0390	Quebracho	1401-55-4
0397	Percol LT22S	N.A.
0410	SECOFLOC 800	7647-01-0, 7732-18-5 141-43-5, 50-00-0
0420	Sodium Chloride	7647-14-5
0428	Santosite	7757-83-7
0430-0431-0432	Scav-Ox	302-01-2
0433-0439	Scav-Ox II (Organic Catalyst)	302-01-2
0435-0436-0437	Scav-Ox Plus	302-01-2
0440	Sodium Sulfate	7757-82-6
0441	Silicate of Soda	1344-09-8
0443	Sodium Carbonate, anhydrous	497-19-8
0444	Soda Ash	497-19-8
0452	Sodium Bichromate	10588-01-9
0455	Sodium Chlorite Solution 31%	7647-15-6
0456	Sodium Bisulfate	7681-38-1

0457	Sodium Chlorate (99.5%)	7775-09-9
0458	Sodium Borate - $5H_2O$	1330-43-4
0459	Sodium Chlorite	7758-19-2
0460	Sodium Chlorite (Technical) 50%	7758-19-2
0461	Sodium Chromate	7775-11-3
0462	Sodium Carbonate Solution	N.A.
0463	Sodium Citrate, dihydrate	68-04-2
0464	Sodium Hydrosulfite	7775-14-6
0465	Sodium Hypochlorite	7681-52-9
0466	Sodium Bisulfite, Anhydrous	7681-57-4
0468	Sodium Meta Silicate	6834-92-0
0469	Sodium Molybdate	7631-95-0
0471	Sodium Sulfide, Flake	1313-82-2
0480	Sodium Nitrite	7632-00-0
0481	Wayzole TT-85S/Cobratec TT85	64665-57-2
0482	Sodium Polymethacrylate	N.A.
0483	GOOD-RITE K-XP82D	9003-04-7
0484	Sodium Sesquicarbonate, dihydrate	533-96-0
0485	Sodium Polyphosphates, Glassy	68915-31-1
0488	Sulfamic Acid	5329-14-6
0489	Starch	9005-25-8
0491	Sulfuric Acid 66° Be	7664-93-9
0493	Sybron Bi-Chem LC 1002 CG - 1738 Blend	N.A.
0494	Sybron Bi-Chem DC 1002 CG - 1738 Blend	N.A.
0495	Sybron Bi-Chem LC 1002 CG	N.A.
0496	Sybron Bi-Chem DC 1002 CG	N.A.
0497	Sybron Bi-Chem LC 1008 SF	N.A.

0498	Sybron Bi-Chem DC 1008 SF	N.A.
0499	Sybron Bi-Chem LC 1738 CW	N.A.
0500	Sybron Bi-Chem DC 1738 CW	N.A.
0501	Sybron Bi-Chem LC 1008 SF - 1738 Blend	N.A.
0502	Sybron Bi-Chem DC 1008 SF - 1738 Blend	N.A.
0505	T DET N-11	9016-45-9
0518	Poly-Tergent B-350	26027-38-3
0520	Poly-Tergent SL-62	N.A.
0521	Poly-Tergent S-305-LF	N.A.
0525	TPPP Solution	7320-34-5
0526	Tetrapotassium Pyrophosphate, Powder	7320-34-5
0527	Tetrasodium pyrophosphate (TSPP)	7722-88-5
0528	Tolutriazole	29385-43-1
0532	Triethanolamine 99%	102-71-6
0533	Triethanolamine 69.3%	102-71-6
0534	Tripolyphosphate	7758-29-4
0538	Tri Sodium Phosphate	7601-54-9
0540	Triton X-114	9036-19-5
0541	Triton X-100/Harcros-DET 0-9	9036-19-5
0542	Triton CF-54	69279-01-2

0584	Methylene Bis Thiocyanate	6317-18-6 64742-95-6
0590	WSCP	31512-74-0
0596	XD-7287 L	10222-01-2 112-60-7 25322-68-3 7732-18-5 7647-15-6
0597	Witconate P-10-59	26264-05-1
0602	Zinc Chloride Solution	7646-85-7
0609	Zinc Nitrate 50%	7779-88-6
0610	Zinc Oxide	1314-13-2
0620	Zinc Sulfate	7733-02-0
OLIN 1803	Sodium Sulfite, Synthetic Anhydrous Catalyzed & Decharacterized	7757-83-7 68131-31-7 10124-43-3
OLIN 1804	Sodium Sulfite, Catalyzed	7757-83-7 10124-43-3

APPENDIX D

HAZARDOUS WASTE CONTAINER STORAGE AREA INVENTORY LIST